MORE HEROES OF MODERN ADVENTURE

T.C. BRIDGES & H. HESSELL TILTMAN

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CAPTAIN THE HON. B. E. H. CLIFFORD ON ONE OF THE SIX-WHEELED TRUCKS WHICH CONQUERED THE KALAHARI DESERT

Fr. *Photo by courtesy of W. J. Makin*

MORE HEROES OF MODERN ADVENTURE

BY

T. C. BRIDGES

AND

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AUTHORS OF "HEROES OF MODERN ADVENTURE" "RECENT HEROES OF MODERN ADVENTURE" "HEROES OF EVERYDAY ADVENTURE" "THE ROMANCE OF MOTORING" ETC.

WITH THIRTY-TWO ILLUSTRATIONS
IN HALF-TONE

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AUTHORS' NOTE

The interest taken in a book can best be gauged by the number of copies sold, and the success of our first volume of "Heroes of Modern Adventure" has been so gratifying the authors have been encouraged to believe that there is a demand for a second series. So here it is. Every one of the eighteen narratives in these pages is a story of a man or woman of our generation who has risked life on the adventure trail. Not all of them will like being called "heroes", for in every case it was either the call of duty or the pursuit of knowledge that took them into the wild places or caused them to face great dangers, and all are content that the sense of achievement should be their reward.

To make this book possible, weary and frozen men fought the blizzards of the Antarctic, risked life in the far forests of the Amazon and in the deserts and jungles of Africa, sailed round Cape Horn in winter, and tracked murderers for months at the world's end. We do not believe that any adventure lover between the ages of twelve and sixty can read these chapters from real life without being inspired by them, for here are some of the greatest stories of heroism and endurance of this or any generation — feats which are in striking contrast to the drabness of everyday life. Here are thrills, escapes, risks, heroism, and death — the dauntless spirit of the true adventurer shines through all the pages of this book.

We wish gratefully to acknowledge the courtesy of Lady Dorothy Mills, General Frank Sutton, M.C., Captain Harwood Steele, Captain E. Mills Joyce, A.M., the late Captain Bert Hinkler, Doctor Thomas Gann, Captain C. W. R. Knight, Mr. R. M. Macdonald, Mr. A. J. Villiers, and other adventurers of to-day, to whose helpful co-operation whatever merit this volume possesses is largely due.

T. C. BRIDGES
H. HESSELL TILTMAN

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CHAPTER I

THE BATTLE FOR EVEREST

Brigadier General Bruce's Great Story

FOR very many years Mount Everest has figured in the geography books as the highest mountain in the world, and more than half a century ago schoolboys were taught that its height was 29,002 feet. It is hard, then, to believe that up to the date of Colonel Howard Bury's prospecting expedition in 1921 no European had been within sixty miles of the base of the great peak.

It is the vastness of the Himalayas and their inaccessibility which makes their conquest so difficult, and to make matters still harder for climbers most of the range is situated in the "Forbidden Land" of Tibet. Mount Everest itself is no less than one hundred and ten miles from Katmandu, the capital of Nepal and the nearest civilized place to its base. Another difficulty in the way of climbers is the nature of the country, which is wild and rough beyond conception. In order to reach the base of Everest, passes must be crossed whose summits are two thousand feet higher than the peak of Mont Blanc, and every morsel of food, all instruments, and stores have to be carried on the backs of men or pack animals over these tremendous heights.

It was for long believed that man would be unable to climb steep mountains above a height of eighteen thousand feet owing to the rarefaction of the air at that height and consequent difficulty in breathing, but in 1883 Mr. W. W. Graham proved this to be a fallacy by climbing the great

mountain of Kabru, 24,015 feet high. He had with him two Swiss guides, Emile Boss and Ulrich Kaufmann, and starting from Darjiling with a party of coolies they reached the base of Kabru and climbed without much trouble to a height of sixteen thousand feet, where they established a camp. Next day they reached the nineteen thousand feet level, only to find themselves cut off from the peak by a huge rift. They went back, spent the night at eighteen thousand five hundred feet and the next day resumed the climb. They were not quite able to gain the summit, for that was a vertical pinnacle of hard blue ice, but they reached a height of 23,965 feet, a new record which remained good until the Duke of the Abruzzi gained 24,600 in an attempt on another Himalayan monarch, the Bride's Peak.

After Colonel Howard Bury had proved that it was possible to approach the base of Everest, the Mount Everest Committee set to work on the expedition which was to attack the mountain in the following spring. One of the great difficulties in the way of climbing Everest is that the season is so short. The monsoon or rainy season, which brings a great snowfall, gales, and terrible weather in the mountains, arrives early in June, so that all climbing must be done during May. On the other hand, it is impossible to start very early in the year, for the cold up to the end of March is terrible in the high passes of Tibet. Running streams are still frozen solid in that month, and the strain of living under such conditions is so severe that a climbing party has to wait until April before starting over the passes.

The party chosen for the first assault on Everest was commanded by Brigadier General the Honorable C. G.

Bruce, and no man could have been picked who was better qualified for the task. He was an expert mountaineer, having been climbing in the Alps and Himalayas for more than thirty years. He had served in a Gurkha regiment for a similar period, spoke the Gurkha language, and was extremely popular with these fine little fighting men. Beyond that, he had a wide knowledge of the peoples of the Himalayas, their thoughts, customs, and superstitions. Especially their superstitions, for it must be remembered that the Tibetáns look with awe upon the huge mountains which dominate their country, and have a firm belief that the heights are tenanted by demons who will destroy any mortals rash enough to invade their snow-clad peaks.

Second in command was Lieutenant Colonel E. L Strutt. The Medical Officer was Doctor T. G. Longstaff who was also an expert naturalist, and the photographer was Captain J. B. Noel. It was not expected that any of these would make the actual assault on the summit; for this purpose were chosen Mr. George Leigh-Mallory, who had already been on the reconnaissance expedition, Captain George Finch, Major E. L. Norton, Doctor Somervell, and Doctor Wakefield. Two Indian officers, Captain J. G. Bruce and Captain C. G. Morris, were in charge of transport, and the last member of the party was Major Morshead who, like Mr. Mallory, had been up with the survey party of the previous year and who was well acquainted with the country they had to cross.

General Bruce himself selected the coolies who were to accompany the expedition and took particular care in choosing the cooks, for he knew by experience that the health of the entire party would depend on good food properly cooked, and was aware of the extreme importance of

bringing the climbers up to the scratch in good condition. No man can hope to climb frozen rocks five miles above sea level unless his health is perfect.

The party arrived at Phari in Tibet on April sixth. Phari lies more than fourteen thousand feet up and the weather was intensely cold. From there the great convoy, with yaks, ponies, bullocks, and mules started across lofty plains covered with frozen grass. It snowed heavily. They climbed to seventeen thousand feet and suffered bitterly with cold. The fast-flowing stream outside the camp froze solid during the night.

They had more than three hundred pack animals and fifty or sixty Tibetan porters and when they reached the foot of Everest all flour, meat, and grain for this small army had to be brought from villages forty miles away. Another difficulty was that all the men had to be paid in cash, which meant the carrying of a very large quantity of silver money.

The last human habitation they passed was the Monastery of Rongbuk. Everest was at the end of the valley in which this Monastery lay and looked within an easy walk, but was actually sixteen miles away. The Lama of the Monastery asked the leaders of the expedition to tea, but as the tea was mixed with rancid butter and salt it was not the nicest of drinks. The General avoided drinking it by informing the Lama that he had a vow not to taste butter until he had been to the top of Everest. The Lama was a good deal puzzled as to why any human being should want to climb the great mountain, but General Bruce had the happy idea of explaining that it was a sort of pilgrimage, and this proved quite satisfactory. The Lama asked the party not to shoot any wild animals, and on receiving their

promise gave them his blessing and best wishes for their success.

Shortly afterward the base camp was pitched at a height of 16,500 feet. Here the chief difficulties were fuel and water. There is no wood at this height and the only fuel is the dried yaks' dung. All the streams were frozen and ice had to be melted to make tea.

There was not too much time for the monsoon was due in about four weeks, so work was pushed on rapidly, and other camps were formed at 17,800, 19,800, and 21,000 feet. At these altitudes the night temperature dropped to twelve degrees below zero. The weather was very bad and on May 14 the wind blew so hard that it was impossible to stand against it. One of the Tibetans explained that this was the date on which there was a special service at the Monastery and as this service annoyed the demons of the heights they were roaring to try and stop it.

At last all was ready for the attempt on the summit. This was made by Mallory, Somervell, Morshead, and Newton, who climbed to twenty-five thousand feet, where they spent the night; next day they reached the record height of 26, 985 feet, or only about two thousand feet below the summit. This attempt was made without oxygen, and it was a surprise to all that they could climb at such a height in the intensely thin air. They suffered from breathlessness, a dull headache, and sore throat, but were not actually sick. It was exhaustion and frostbite which drove them back.

Everest, it should be explained, is not a difficult mountain to climb from the point of view of an experienced mountaineer. It is its tremendous height, its huge distances, and the effects of extreme altitude on the climbers that make

it so hard to conquer. Another trouble is that at the great heights reached the climbers had no appetite for food. Soup and sweets were almost the only things they could swallow, and these foods were not enough to give them the strength necessary to carry on in such intense cold. The bitter wind was their worst enemy. Wool was found to be no protection at all, and all had to wear wind-proof outer garments. If they did not do so they became frostbitten, as happened to Captain Morshead in the first climb.

A second attempt was made on May 20 by Captain Finch and Captain Bruce and one of the Gurkhas. They took the oxygen apparatus, and being caught in a furious storm, had to pass two nights at 25,500 feet. Eventually they reached 27,235 feet, when they were forced to beat a retreat owing to being completely played out. At heights over twenty-five thousand feet it was found that a party could not climb more than four hundred feet an hour.

The weather grew worse and it was plain that the monsoon was going to break earlier than usual, so it was decided that Somervell, Crawford, and Mallory should make a last dash. New snow had fallen and in spite of the frost the crust did not bear their weight. They sank deeply at every step, making the labour of climbing incredibly hard. The three Englishmen led the way, beating a track for the laden porters. The idea was to establish a fifth camp at twenty- six thousand feet, with a store of food and oxygen, and from this to make a final attempt on the summit. The snow grew worse and the work was terribly exhausting. The one thing in their favour was that there was no wind.

About half-past one, as they pushed up a steep slope, there came a loud crunching sound, which burst strangely through the calm air. The smooth surface of the snow

cracked and broke open, and before anything could be done an avalanche was sweeping the whole party down the steep slope. All were of course roped, and all were carried slowly downward, crushed by waves of snow.

Mallory, after being completely buried, found himself shot to the surface, and realized that the slide had ceased. He saw too that Somervell and Crawford were both struggling safely out of their white shroud. Then he looked for the porters. These having been nearer the centre of the slide had been carried farther, and a number of them had been swept over a precipice some fifty or sixty feet high. Four only appeared to have escaped. The Englishmen hurried to the help of those buried and dug out two alive, but no fewer than seven were killed. Of the two who were rescued, one, a Sherpa named Angtarke, had fallen sixty feet and was found upside down, tightly packed in hard snow. Yet in a little while this man had recovered sufficiently to walk down the mountain.

Needless to say, this terrible accident put an end to the third attempt on the peak. The bodies were left in their snowy graves, and a great cairn was built in memory of the victims. It was noticeable that the other porters, some of them brothers of the dead men, made no fuss about their loss, but took it in a quiet and dignified manner. The Sherpa people in particular are true mountain folk, hardy, able to carry enormous loads over bad country, and very faithful to their employers. Their chief vice is that they get drunk whenever opportunity arises.

The expedition started back in driving sleet, but soon found better weather, as well as flowers and green grass, to which they had been strangers for many weeks. They went slowly, for the feet of several were still tender from

frostbite, but on the whole it was a pleasant journey back to India. They were not discouraged, for after all they had climbed higher than man had ever climbed before, and they hoped that another attempt would result in complete victory.

A second expedition was soon decided upon, but it took two years to prepare, and it was not until March, 1924, that it started. Again General Bruce was in command and there were four other veterans of the 1922 expedition, namely Mallory, Somervell, Colonel Norton, and Captain Bruce. There were also Shebbeare of the Indian Forest Department and Odell from Persia, an expert in the use of oxygen, and geological scholar. Hingston came as doctor and as naturalist. The chief mountaineering recruits were Andrew Irvine, an Oxford rowing blue, and only twenty-two, and Hazard, a sapper with a wide experience of climbing.

A sad disappointment was in store for General Bruce. As the expedition crossed the lofty pass of Douka La a bitter gale swooped upon them and next day the General was down with a severe attack of malaria. Malaria is bad enough in the tropics, but at fifteen thousand feet it is a very serious illness. Under Hingston's care the danger was over in a few days, but the patient had to be carried down out of Tibet and Colonel Norton took command.

The 1922 expedition had not been blessed with anything wonderful in the way of weather, but that of the spring of 1924 was infinitely worse. It was not the monsoon — the rainy season — but just ordinary, or should one say "extraordinary" bad weather which kept coming in from the west, causing high winds, snow storms, and intense cold. If there is a lot about weather in this story it must be re-

membered that weather means everything in mountain climbing, and especially in such a big job as climbing the giant of all mountains. The long struggle with bad weather on the lower stretches of the mountain in 1924 most surely cut down the physical strength and health of the party by just the margin that made the difference between success and failure. Well into April there were twenty-eight degrees of frost, with constant gales. Long marches under such conditions were bound to take it out of the party.

When the mountain was reached and the work of forming camp began, conditions were worse than ever. A shrieking gale with fifty-four degrees of frost was enough to discourage any one. At camp Number Three, twenty-one thousand feet, a blizzard raged and snow drifted into the tents. The marvel was that the tents were not blown away, but they all stood the strain. One of the great difficulties in such a place and such weather is to do any cooking. Even when you have got your spirit stove burning it is practically impossible to make tea because at such heights water boils at a temperature so low you can almost keep your hand in it.

In a good blanket-bag a sleeper can keep warm in almost any weather, but his great difficulty is to keep his boots warm. This may sound absurd, but boots, however well oiled or greased, freeze stiff and solid in the terrible frosts of Everest. Since it is not wise or comfortable to wear them all night, the best solution of the difficulty is to use them as pillows.

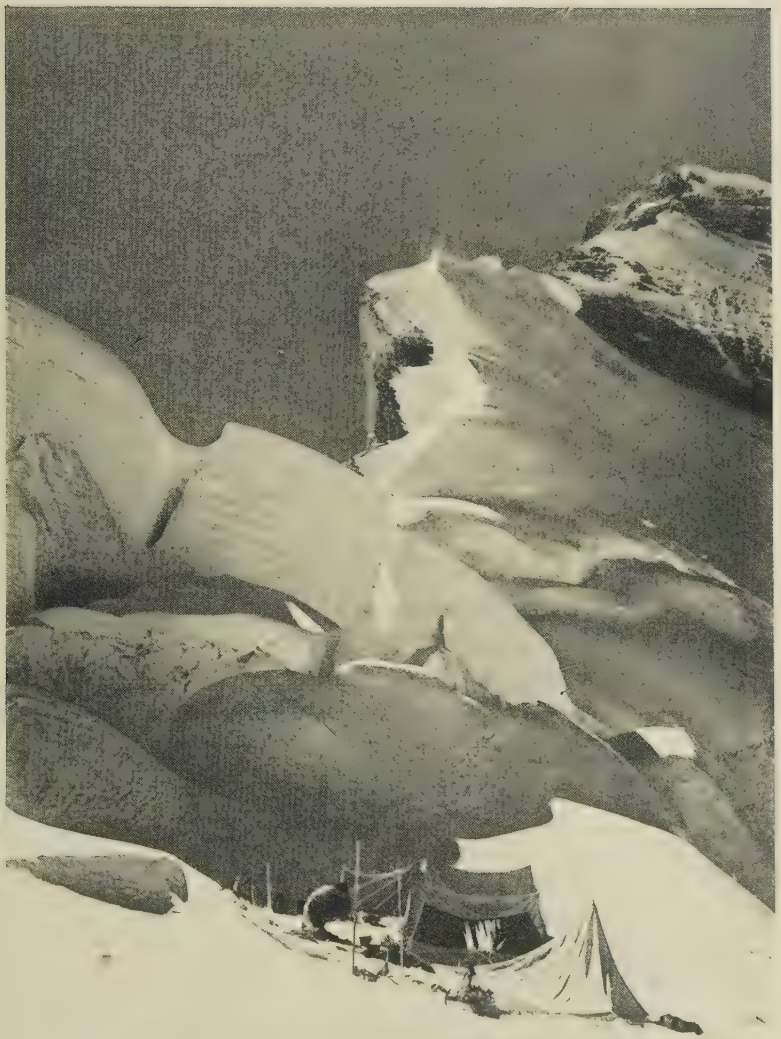
In the end the party were forced by bad weather to retire to camp Number Two. Several of the carriers were frostbitten and others became snow-blind. One man had pneumonia and another had broken his leg, and these had to be carried down the mountain and made comfortable.

Such a delay, when every day counted, was very serious.

It was not until May 16 that the weather mended; by the nineteenth, camp Number Three was again occupied and it was arranged that Colonel Norton, Mallory, Odell, and Somervell should push on. But on the morning of the twentieth Somervell was not well enough to climb. He was suffering — of all strange complaints — from sunstroke caused by the sun glare of the previous day. Sunstroke, it should be explained, is caused not so much by the heat of the sun as the actinic rays, and sunstroke is much more common in high country than at sea level. In Florida, for instance, though the summer sun is intensely hot, sunstroke is unknown.

That day they surveyed the route to above the twenty-three thousand feet level and returned to camp. Then it snowed and froze terribly. The thermometer fell to twenty-four degrees below zero, a temperature which would try an Arctic explorer, but was infinitely worse in the terribly rarefied air of these great heights. Mallory and Somervell both had bad throats, Irvine was not well, the porters were much the worse for wear, and once more the party was forced to retreat, and a very difficult and dangerous retreat it was through deep, soft snow.

Were the men discouraged? The best answer is that by May 30 they were back at camp Number Three, and on June 2 camp Number Five was established at 25,300 feet. Then Colonel Norton and Somervell made a start for the summit. The air was clear but the wind was terrible. It had such a power that it was necessary to lean into it when cutting steps. The route followed was the same that had been followed by Mallory, Somervell, and Colonel Norton, and soon after twelve o'clock the highest point that these



A CAMP ON MOUNT EVEREST, SHOWING THE FORMIDABLE NATURE OF THE SURFACE WHICH CLIMBERS HAVE TO FACE

Photograph reproduced, by permission, from the Royal Geographical Society's collection

MEMBERS OF THE BRITISH EXPEDITION OF 1924 ON THE UPPER SLOPES OF MOUNT EVEREST

Photograph reproduced, by permission, from the Royal Geographical Society's collection

had reached two years previously was passed. The wind was not so bad and conditions were better than before. The three porters were very tired and one was lame, so about an hour later Colonel Norton decided to make camp.

The two chief difficulties in camp-making on Everest are, first, to find any shelter from the wind and, second, to find any level space on which to pitch a tent. On this occasion the party had to find and pile up loose stones to make a platform on which they could rest. The tent was pitched and Norton and Somervell spent a night at nearly twenty-seven thousand feet, certainly the greatest height above sea level at which human beings had ever before slept.

Next day was fine and not windy but the cold was intense. After breakfast the two started upward but progress was very slow indeed and every few steps they had to stop and gasp for breath, and very often to sit down. Somervell's throat was very troublesome and his cough racked him, while Norton's eyes began to play him tricks. After some hours Somervell's throat became so bad that he was forced to stop, and Norton went on alone. The going became dangerous, for it was a matter of climbing along narrow ledges, some less than a foot wide, in deep powdery snow. It was the sort of work which would have been well enough with several men on a rope but was most perilous for one tired man alone. Yet Norton stuck to it and finally reached a height of 28,126 feet. The summit was in plain view, but he was almost exhausted and the hour so late that it was hopeless to dream of climbing the remaining eight hundred feet and returning before night fell. There was nothing for it but to return.

The return was almost worse than the climb, for both climbers were terribly exhausted. Somervell lost his ice

axe, which shot away down the steep mountain side and disappeared. Later Somervell had a fit of coughing which nearly choked him. It was dark before they gained camp Number Four, to be received by Mallory, Odell, and Irvine and fed and cared for. Next morning Norton was quite blind. It was snow-blindness caused by sun glare on the snow, and it was several days before he recovered his sight.

Since the monsoon had not broken and the weather remained fine, it was decided to make one more attempt on the summit, and early on the morning of June 6, Leigh-Mallory and young Irvine started. They had four porters with them and carried the oxygen apparatus. Oxygen is an immense help to breathing at great heights and is of course taken by aircraft pilots who intend to try for height records, but it has the disadvantage that it irritates throats already damaged by cold dry air. And young Irvine's throat was in none too good condition when he started. Yet both Mallory and Irvine were fine and fearless climbers and Mallory had probably a wider knowledge of Everest than any other member of the party.

The two spent the last night of their lives at camp Number Six. The last person to see them was N. E. Odell who, climbing alone at twenty-six thousand, watched the two tiny dots moving far up the mountain side. For the moment the whole peak was clear of cloud, but the distance was too great for Odell to say which was which of the two climbers, or whether they were roped together. He could not even be quite sure how far up they were, and while he watched the mist fell again. The two were moving, one at a time, over what appeared to be difficult but not excessively difficult ground. Odell visited camp Number Six, but as

there was only one small tent there, just big enough for two people, he thought it best not to remain, so after helping himself to a little food, he closed up the tent and made the best of his way downward. He returned to camp Number Four where he met Hazard.

Next morning he and Hazard, sweeping the upper slopes with glasses, could see no signs of movement at camps Five or Six, so once more Odell and two porters started upwards. The wind was very bad and it took a long time to reach camp Five, where the night had to be spent. The cold was cruel, and all night the fierce gale raged across the bare face of the great mountain. Odell spent a wretched night, and next morning, finding his two porters in a state of collapse, was forced to start alone for the uppermost camp. The wind still blew as strongly as ever and intensely cold, and it was only after a desperate struggle that Odell gained camp Number Six.

He found no one there. No one had been there since his own last visit. Worn as he was and in spite of the cruel weather Odell went straight upward in the hope of solving the mystery of his two friends' disappearance. It was a very brave thing to do but nothing came of it. What could have been expected of one man, crawling like an insect among vast stretches of crags? One man already worn out, struggling against a fury of storm and sweeping mist! At last Odell was forced back to camp Number Six from which he signalled to Hazard below that there was no news. It meant, of course, that there was no hope, for by this time it was out of the question that Mallory and Irvine could have survived.

Their fate remains, and probably always will remain, a mystery. It may be that, lured onward by the intense

desire to reach the summit, they did not leave themselves sufficient time to return before being benighted. In that case they might easily have missed their way and tried to face out the night in the open. Sleep comes quickly under such conditions, but it is the sleep of death.

The only alternative is that they fell; this is not very probable for both were fine cragsmen, and the actual climbing on Everest is not difficult. It is of course possible that, above the level of 28,100 reached by Colonel Norton, there might have been a worse place than any previously met with. Odell, who was the last to see Mallory and Irvine, and who has written the account of their last attempt, inclines to the belief that they met their death by being benighted, but the rest of the party are of opinion that there was a slip and sudden death. Odell thinks, too, that it is quite likely that his comrades succeeded in conquering the mountain before they met their end.

Yet another attempt, led by Mr Hugh Ruttledge, was made in the spring of 1933. The expedition was delayed on its journey to the mountains by a late and unusually heavy snowfall. The weather continued bad; it was, indeed, worse than that of 1924. The whole mountainside was blocked with fresh snow, while gales and storms were incessant. In spite of every effort, the expedition had to return without gaining the height reached before.

Against this gallant failure must be set the success of the Houston-Mount Everest Flight Expedition of 1933, led by Air-Commodore Fellowes. Lord Clydesdale, son and heir of the Duke of Hamilton, was one of the pilots. Two flights were made over the summit of the world's mightiest peak. A series of wonderful photographs was taken, and the strange discovery made of a large frozen lake at a height of more than 20,000 feet.

CHAPTER II

THE CROSSING OF THE KALAHARI

Captain the Honourable B. E. H. Clifford's Achievement

ON maps of Africa made fifty years ago were many great blank spaces, but in maps of to-day few of these spaces remain. White men have crossed the Sahara in every direction, and aeroplanes fly roaring across the lofty uplands and matted jungles of the vast central part of the continent.

One of the largest bare patches which still remains is to be found in the centre of southern South Africa, between the Transvaal and the big stretch of land which was formerly German Southwest. This is the Kalahari desert, the width of which is about the same as the distance between London and Inverness — small perhaps, when compared with the Sahara, yet quite big enough and savage enough to defeat the efforts of explorers.

The Sahara has its camels, but there are few camels in the Kalahari. Bold prospectors who have at times driven their way into it, in search of gold or game, have had to rely on oxen or horses, and both these animals are liable to perish from the attacks of the terrible tsetse fly, which plants its slow poison in their veins, a poison for which there is no known cure. It is a sad and terrible fact that very few of these explorers have come out again. Most have left their bones in the desolate waste. When a party of Boers tried to cross the desert some fifty years ago two

hundred people and nine thousand cattle died and only a few half-dead survivors struggled through.

Thirst is of course the chief foe of the desert explorer, but in the Kalahari other perils await the adventurer. The little Bushmen who inhabit its recesses were so cruelly treated by the early Dutch settlers along its borders that ever since they have retaliated by shooting intruders with poisoned arrows. There are also lions ready to pounce upon the unarmed or unwary, and many poisonous snakes.

The climate is terrible. Most of this desert lies at a great height above sea level, so although the sun scorches by day, at night the frost is so bitter that only the strongest constitution can withstand the tremendous variations of temperature.

For many years past the British Imperial Government has wished to make a survey of the Kalahari, and of late the need has grown more and more urgent. There are settlements on both sides, and the people on the eastern side need the cattle which are bred on the western edge. What was required was a way across the desert, a route where water could be found, independent of the short rainy season. It was for the purpose of finding such a route that an expedition was formed under the command of Captain the Honourable B. E. H. Clifford.

Captain Clifford is the youngest son of Baron Clifford of Chudleigh, and at the date of the start of this expedition he had been for five years Imperial Secretary to the Earl of Athlone, Governor-General of the Union of South Africa. The country in which the Kalahari lies is not part of the Union of South Africa but is a protectorate, and so the expedition was organized not by South Africa but by the Imperial Government.

Exploration of the Sahara was made possible by motors, and Captain Clifford decided that his only chance of success was to use this method of transport. The loads to be carried were very heavy, so instead of ordinary motor cars two six-wheeled trucks were provided, made by the Morris Motor Company. The exploring party consisted of Captain Clifford, Sub-Inspector Beeching, Protectorate Desert Officer Mr. Grantham, a Morris factory expert, two chauffeurs, three native constables with a native corporal, and a native cook. Last but not least was Mr. W. J. Makin, special correspondent for the *Daily Mail,* to whose kindness the authors are indebted for the story of this interesting expedition.

The party left Mahalapye in Bechuanaland on June 2, 1928. June is of course a winter month in South Africa, and as winter is the dry season, Captain Clifford was aware that water would be very scarce. Water is as important as petrol for such a journey, not only for men but for motors, so three fifty-gallon tanks were filled and loaded in the lorries. The amount of petrol carried was three hundred and twenty gallons, in itself a heavy load. Besides the petrol and water there were spare tires, bedding, food, tents, tools, and caterpillar tracks meant to be used where the sand was too deep and soft for wheels, so the trucks were laden to capacity.

At first the going was good, grassy flats sparsely wooded with clumps of thorn bush. It was not all desert, for patches of fertile land were seen, some of which were tilled by natives. After travelling twenty-four miles the expedition reached a good-sized native village called Shoshong, formerly the capital of the famous native chief Khama. Beyond Shoshong the country grew more bare, yet there

was water here and there, and a few small native villages were passed. By nightfall the trucks had covered seventy-nine miles, and the party camped near a water pit, the last they could expect to find for some hundreds of miles.

Next morning all started off very cheerfully, but as the sun arose higher the heat and glare became terrible and soon the trucks were grinding through deep, soft sand in which the wheels sank deeply. The lorries had to travel on low gear and the way in which the water boiled away from the radiators was terrifying, when the supply was so limited. The engines were consuming far more water than the human part of the expedition, so Mr. Grantham set his wits to work and rigged up a kind of condenser which he made out of an old petrol tin and some rubber tubing. In this way a good deal of the steam escaping from the radiators was condensed, so that part at least of the water could be used a second time. Even so, the amount of water consumed was so great that Captain Clifford made up his mind that during the rest of the journey the party should travel by night and sleep during the day. This was all to the good, so far as saving water was concerned, but it was not a bit pleasant for the travellers themselves, for the cold at night was bitter. The wind that swept over this lofty desert, most of which lies four thousand feet above sea level, was intolerably cold. Though the members of the party put on all their warmest things and wrapped themselves in blankets they shivered and their teeth chattered. Mr. Makin says that each morning the little water bags which dangled at the back of the trucks were frozen *solid,* so that the kettle boiled for morning tea had to be filled with lumps of ice.

It was a weird business, ploughing along through the

black night across the wastes of sand, guided only by the compass and the frosty stars. The rate of travel depended entirely on the nature of the ground, which in some places was so bad that the speed was down to two miles an hour. One morning it was found that they had covered only twenty miles since leaving the last camping place. Twenty miles in eight hours! That gives us some idea of the sort of country over which the trucks must be driven.

Do not imagine that travelling across the Kalahari means merely sitting at the wheel and letting the car roll forward. Once an hour on an average the expedition was held up by a punctured tire, and the sleepy, half-frozen passengers had to get out, take off the wheel and the tire, mend the hole and replace the wheel. The work had to be done with half-frozen fingers by the light of the head lamps. Captain Clifford remarks in his official account of the journey: "As an isolated experience the operation is inoffensive enough, but when it has to be performed more or less continuously through the night, and when the finger tips are worn sensitive with it, the whole beastly task and everything associated with it goads body and soul into revolt." It was not stones which caused these punctures but usually pieces of dry stick about the size of a lead pencil. They were almost as hard and sharp as pieces of steel.

Sometimes the party would come to a ridge where the wheels would not grip at all. Then the caterpillar tracks had to be adjusted to enable the ridge to be climbed. The tracks were very useful in heavy sand.

In order to save time, the travellers cut themselves down to two meals a day, a late breakfast and dinner or supper at half-past nine at night. They would start the drive between four and five in the afternoon, travel till half-past

seven or eight, then stop and cook their food, resuming the journey later and travelling all night. They took turns at the wheel; those not driving did their best to sleep in the backs of the lorries.

One night when Mr. Makin was on the "front bench" with the driver of the leading lorry, he suddenly saw two pairs of green eyes glowing in the darkness. "Lions!" breathed the driver. Mr. Makin leaned over and shook one of the sleepers behind. "Give me a rifle," he said urgently. "There are lions ahead."

"Lions!" jeered the other. "Tell us another." And before Mr. Makin could persuade him of the truth the lions had departed. The party saw a good deal of game. There were giraffes, buck, zebras, even elephants, as well as ostriches and eagles, but there was little time to stop and shoot. The expedition must get ahead as quickly as possible.

Right in the middle of the desert they came to a little kraal named Zuwe where a few of the Bakalahari people lived. They talked to the head man, who said that in the rainy season there were a good number of people in the place and a quantity of cattle, but now only a few goats. Captain Clifford asked the man about water and he said that at this time of year there was none. "But how do you get drink?"enquired the Captain in surprise.

"I do not drink," was the astonishing reply, "and the goats do not need water. I get enough moisture in my food." Asked about this food, he took a shovel from the lorry and searched awhile through the scrub. Presently he found a dried-up creeper that looked like a piece of string, and began to dig. He unearthed a bulb about the size of a child's head which, says Captain Clifford, resembled a parsnip

suffering from elephantiasis. Cut open, this gave a small amount of moisture which the Bushman said was plenty for himself and his goats. The little man was immensely interested in the lorries, but rather frightened at the noise of the engine. He told the white men that when he first saw the lorries he thought that God must be changing his place of abode. Another Bushman who overtook them at a halting place had been dreadfully puzzled at the tracks and said that he had supposed he was following the trail of some huge serpent.

Day and night travelling, lack of sleep, shortage of food and other discomforts were having their effect on the members of the expedition. Tempers were near cracking point. All were dirty and unshaven, their skins and clothes covvered with sand, their eyes sore with lack of sleep. Some were suffering from fever. Also they were growing very uneasy as to whether they would manage to reach the dump of petrol which had been left for them by an expedition pushing out from the western edge of the desert. They were too far out to contemplate turning back and the only course was to keep going and hope for the best. Of water they still had enough, but as the days passed petrol grew terribly low, and the sand was so deep and the going so bad that a gallon carried a truck no more than four miles.

Fresh troubles befell. After leaving Zuwe they struck a patch of dense thorn bush which was responsible for several fresh punctures in the tires. Beyond this they came to harder, more open ground, where they were able to increase speed. The track on the second lorry had worked slack and flapped so much that it struck the tap of one of the fifty-gallon water tanks and knocked it off. Sev-

eral gallons of precious water were lost before the disaster was noticed and repaired. They reached a second little waterless village named Matapa and then came into very deep soft sand, through which they struggled slowly all night. It was the worst going they had met with and to make matters worse the ground was full of holes made by burrowing animals. Every few yards one of the lorry wheels would drop into one of these holes and the engines had to be worked hard to get them out. The scrub disappeared altogether and they found themselves climbing a long, slow slope of perfectly bare sand, across which the night wind blew with searching intensity. At last they reached what appeared to be the summit and here, to their extreme surprise, found a small party of natives shivering over a tiny fire. These people were almost naked, and had no protection except a palisade of sticks.

Captain Clifford called on one of them to show them the way and he came very unwillingly. He walked ahead and the lorries followed, grinding along through the deep sand until the leading one suddenly dropped into what appeared to be a kind of ash pit. While the wheels still spun, the lorry sank lower and lower. It was half-past three in the morning and pitch dark, and there was nothing else to do but stay where they were and wait till dawn. They asked the guide for firewood, but he said there was none. Groping in the darkness they found a small, dilapidated hut and Captain Clifford informed the natives that if they did not produce some fuel he would be compelled to commit arson and burn the local town hall. The effect of the threat was most successful, for a small store of wood was at once produced and a fire lighted. The natives were paid with tobacco and all was well. When light came the half-sunk lorry

CAPTAIN THE HON. B. E. H. CLIFFORD WITH THE NATIVES WHO GUIDED HIM BACK TO CAMP AFTER HE HAD LOST HIS WAY IN THE BUSH

Photo by courtesy of W. J. Makin

A BUSHMAN OF THE KALAHARI COUNTRY HUNTING BIG GAME WITH A POISONED ARROW

Photo by courtesy of W. J. Makin

was dug out and the journey continued on to a flat open plain.

Limestone replaced the sand and they came out upon a great "pan", that is, the bed of a lake from which all the water had evaporated. There are many of these pans in the Kalahari, natural reservoirs during the rains, yet so shallow that the water soon dries away in the winter. Yet in some places water lies not far below the surface, so that if wells were dug there would be a constant supply. And with these wells available it would be a simple matter to drive cattle across the desert.

Next day three tall giraffes were sighted, and as meat was short Captain Clifford took a rifle and went to look for game. He heard a slight movement in the bushes and a little man stepped out. This was one of the true desert Bushmen. His nose was almost flat on his face and he was amazingly ugly, yet his body and arms, though small, were perfectly shaped. He was carrying an armful of the desert melons already described. This man was frightened at sight of Captain Clifford, but when hailed in friendly fashion got over his panic and he and the white man conversed by means of signs. Bushmen live all over the Kalahari, even in the worst of the desert. Often they starve for days but when they do get meat they gorge until they cannot possibly eat another mouthful. They get positively "drunk" on meat and end by falling into a state of stupor. Many of the natives seen by the expedition showed ugly scars caused by their falling into the fire while in this curious state of coma from over-eating.

They are marvellous hunters and their powers of "spooring" (tracking) are almost uncanny. A Bushman finds a spoor and follows it. He goes on hour after hour until

he sights his quarry, then begins to stalk his prey. He smears himself with dust or sand to camouflage his body and works up wind, crawling on his stomach and taking advantage of every atom of cover. Since he has no rifle but only a bow and arrow, it is necessary to get very close to the quarry. When the ground is open and without cover he carries a small bush in front of him as he crawls. If progress be slow this means nothing to him, his patience is infinite. At last he comes within range, fits a little arrow to his small bow, and lets fly. If he has hit the prey (and he rarely misses) it leaps away and may run clean out of sight. The Bushman knows that before long the wounded creature will drop. The poison with which his arrowhead is smeared is deadly. In the case of a buck death comes within two hours, but a great giraffe will take much longer to die. The hunter picks up the spoor again and follows, for he has to be in at the death, otherwise jackals, hyenas, and vultures will share the prey.

No white man has ever learned the full secret of the poison used by these natives. It resembles red currant jelly. It is known that snake poison is a part of it, but the juice of the Euphorbia is also worked in, and the pounded-up bodies of a hairy black caterpillar called *ngwa*. The making of the poison is conducted with much ceremony and weird chants are sung while the unholy stuff is being boiled. The little men are very clever in the handling of these poisons and accidents are rare. If anything does go wrong they have antidotes, and these are as secret as the poison itself.

The early Dutch settlers shot the Bushmen at sight because they stole cattle when the white men had killed or driven away the game on which they fed. Consequently

the little folk are very timid and it is hard to civilize or help them in any way. Captain Clifford's party had, however, little difficulty in making friends with the natives whom they met on their journey, and presents of tobacco went far to establish good feeling. Sometimes the little people would bring them water, but they could never be induced to show the source of the supply. They store their supplies in ostrich eggs which they bury in the ground to keep the contents cool.

The old saying about giving a dog a bad name is very true of the Bushman, but he does not deserve his bad reputation, for among themselves there is very little crime. They rarely steal from each other, and killings only take place when there is serious reason. Captain Clifford says that it is not fair to hang a Bushman for murder because he does not in the least understand the seriousness of his offence. It is equally difficult to imprison them, for they cannot stand captivity and very soon pine away and die. In almost every case a Bushman when sent to prison has had to be released at the end of eighteen months, to save his life.

So much for the people of the desert; now for the story of the expedition. Petrol ran lower and lower until on the ninth day of the journey the men seriously discussed the question of abandoning one lorry and pushing on with the other to the dump which they believed was not very far away. They decided to carry on for another day and a little later entered bush country. A great cloud of smoke was seen on the horizon, and presently it was realized that a huge bush fire was sweeping the country. So far as the travellers themselves were concerned they could easily evade the flames, but the ugly part of it was that the fire

seemed to be driving down upon the very spot where their reserve of petrol was cached.

They reckoned that the fire was burning over a breadth of country twelve miles wide. Happily the wind carried it away from the vital spot and that evening, just before dark, they came upon a clump of bushes above which a piece of paper fluttered in the breeze. The lorries pulled up, every one jumped out and ran to the bushes, and seizing spades began to dig. "We worked feverishly for a few moments," says Mr. Makin, "then some one gave a yell. He had struck a familiar red tin, and if we had found a wealth of buried treasure we could not have been more excited. That petrol prepared by police and camels who had travelled into the desert from the western side saved us. It meant that we had conquered the Kalahari."

Then came another stroke of luck. A pool of water was discovered quite close to the petrol cache, deep among some rocks. That night the travellers lit a huge camp fire, ate an immense meal, and after gorging themselves slept like the dead.

Now they were past the worst of their troubles, they were able to travel more easily. The expedition had covered three hundred and thirty miles of absolutely trackless waste and was within two days' drive of the other edge of the desert. The going became better, and on the twelfth day the travellers arrived at Gemsbok Pan, the headquarters of the resident magistrate, who, with his wife, was delighted to see white visitors, the first for a very long time in this lonely bungalow on the edge of the desert. Water was scarce, but a hot bath was prepared for each of the white men. Dinner was prepared; it consisted of birds killed for the occasion, tinned fruit, and cheese. There

were no fresh vegetables, for at this time of year these cannot be grown on the dry heights. After dinner one of the visitors brought out a banjo and played and sang some popular London melodies. Tears came into the eyes of the magistrate's wife as she listened.

The loneliness of these dwellers on the edge of the Kalahari is terrible and sometimes has strange consequences. At one place Captain Clifford's party came upon a lonely hut built of mud and grass around which were a number of Bushmen and cattle. Out of this hut came an apparition so strange that it made the travellers gasp. It was the figure of an elderly white man dressed in the style of sixty years ago, with long grey locks falling over a deep collar of the Dickens type and wearing a carefully tied cravat. He had the manners of the Victorian age — very courteous, but very reserved. He was quite ready to give all possible information about the country and the way, but resented questions about himself or the reason for his living in so remote a spot. However, Mr. Makin discovered that he had been formerly a schoolmaster and had contributed articles to learned publications in England, that he still spent most of his time writing, and that he lived almost entirely on the milk of his cows. He had a son and a daughter. The daughter, a girl of sixteen, was too shy to speak to any of the party, while the son had "gone native" and was living like a Bushman in a hut near by. He was an expert with bow and poisoned arrow, could follow a spoor for miles, and in spite of his father's remonstrances, went almost naked. That evening a sound of native drums drew the party to a camp fire around which the old white man, his son, and a number of naked Bushmen were indulging in a wild dance. Now and then one of the dancers would

leap right through the flames. A queer sight and a sad one.

Another desert dweller interviewed by Mr. Makin had once been an officer in a crack English regiment. A fine, tall, handsome man, he lives in almost utter solitude with only two black servants to look after him. Yet the rude-looking hut is beautifully furnished and fitted within, and every night its owner dresses with care in white shirt and dinner jacket for his evening meal. His story is a sad one. One night, at mess, a brother officer spoke slightingly of a woman. A fight followed, in the course of which the offender received a blow which stretched him on the floor, motionless. Imagine the horror of the spectators when they found that he was dead. His brother officers advised the other to clear out. He did so, and it is he who now lives this exiled life in one of the most desolate spots on earth.

Perhaps the most startling discovery of all was a black chief who had white servants. This was beyond the desert at a native town called Molepolole. The chief had been educated at an English university, and he hospitably entertained the expedition. Mr. Makin was surprised to see some miserably clad white men and women acting as servants to the chief, and on making enquiries found that they were descendants of some Dutch pioneers who had trekked into the Kalahari. Most died, and only a few survivors stumbled into this village. There they remained. Their descendants have sunk to their present position. They are terribly ignorant; they had never heard of the Great War and only vaguely of the railway. Yet they seemed quite content. The chief, who treated them kindly enough, had a possession of which he was enormously proud, a piano which had been carried hundreds of miles on the backs of men from the distant railway. After sup-

per he sat down and played to his visitors ragtime tunes which had been popular in his student days in England.

At Gemsbok Pan the worst of the journey was over, but there still remained the five hundred mile trek to Victoria Falls. This part of the journey was comparatively easy, the worst danger being from the tsetse fly, which infests broad belts of fertile country. When crossing one of these, Jock, the terrier who accompanied the expedition, was carefully swathed in mosquito netting. Captain Clifford and Mr. Makin were both bitten, but luckily without any harm coming of it. On July 11, exactly three weeks after the start, the two trucks safely reached Victoria Falls, and the first crossing of the Kalahari by motor was finished.

CHAPTER III

THE SAVIOUR OF DEATH VALLEY

"Dad" Fairbanks's Adventures in the Hottest Place on Earth

SOMEWHERE in that deep, stark, stifling pit known as Death Valley, in the deserts of California, or in that unspeakable region of thousands of miles surrounding it, a man is lost. Like countless others he set out for a certain place and failed to arrive. No need to enquire why — the pitiless waste is answer in itself. Unaccustomed travellers there face strange uncertainties. Even the experienced tread in dire peril.

It is already too late to save him, probably, for few can endure the awful heat for long. It seems to fall out of the sky like massed thunderbolts, shattering, irresistible. Yet there is a chance that he may be alive, wandering in wild delirium, undergoing such agonies as only summer desert victims with empty canteens can know.

Quietly the alarm is spread — through those mysterious agencies of the vast solitude that transmit it almost as the telegraph, telephone, and wireless in more civilised surroundings. Almost inevitably the pitiful call comes to the man who, if it be humanly possible, will effect the rescue. That man is Mr. R. J. Fairbanks, "the guardian angel of Death Valley."

"Dad" Fairbanks, as he is affectionately termed, has hunted for over a quarter of a century the unfortunates caught in the clutches of the elemental country round him. He has fought with it almost all his life. Yet he loves it

because he is part of it and its secrets are his too. He would not exchange it for New York or Park Lane, and he is more familiar with all its expanse than the average man with his back garden. His home is at Shoshone, a tiny Californian trading post, water station, and eating house near the Nevada boundary, a few miles east of Death Valley.

This keen, kindly, intrepid spirit, whose clear grey eyes have an eagle's vision, has sought hundreds of persons during twenty-six years, and saved more lives than he or anybody else can remember. He has had experiences that would fill a volume, braved hardships that would be incredible in a less rigorous environment, and again and again escaped as one charmed. Of these things he will talk little, but the searing sun and slashing gales have written deeply in his face the lines that tell an eloquent story.

When travellers vanish, relatives and friends in all parts of the world appeal to "Dad" Fairbanks — and never in vain. Often weary days are spent in the search and great distances covered, yet he never has asked or accepted a reward, and declares that he never will. To aid fellow beings in such circumstances he considers a plain duty and performs it as a labour of love, ever cheerfully and promptly, without thought of remuneration. Often it is at the request of the authorities that he undertakes his missions of mercy in a merciless land.

"Dad" has seen men and beasts and even birds trying to cross Death Valley fall and die — the life scorched out of them by the fierce rays that beat down from the heavens. He has rescued men who had stripped themselves naked and were walking round in circles, their swollen tongues

protruding and the blazing sun shrivelling their skins. He knows only too well the wonderful mirages that make dreams of water such realities to thirst-crazed sufferers that they believe they are wading in its depths and hold their clothing above their heads to keep it dry. Sometimes they warn him to be careful of the high waves and clutch him about the neck as would a drowning person. One afternoon he came upon a young man sifting sand between his fingers and laughing hilariously. In response to questioning, the youth said he was straining the polly-wogs out of the water so that he could drink it and the "critters" amused him! In another hour he would have been a corpse.

For years, even "Dad" himself believed there was an open lake of considerable size on the floor of the valley, because everybody told him that what he could see was in this case actual reality. When he finally visited the spot, it was as dry as the Sahara! If such a veteran can be deceived, what shall be said of the tenderfoot's chances?

The Death Valley country is appalling in size, but the first thing "Dad" did was to cover it all, learning every trail, water hole, wash, canyon, and mountain. He spent weeks and months with the Piute Indians, the homeless Arabs of the American desert, in order that he might acquire a thorough knowledge of the immense territory, and now he is more familiar with it than any man, Indian or white.

The valley itself — a huge depression in the earth's crust, one hundred and fifty miles in length, and from ten to thirty-five miles in width, rimmed in by mountains — derives its name from the tragedy which overtook a party of emigrants who lost their lives there in 1849. Its sun-

baked floor lies three hundred feet below sea level, the lowest point on the American continent. It is claimed to be the hottest spot on earth. "Dad" tells how he has seen the thermometer climb to 130 degrees in the shade, and so much higher in the sun that the thermometer could not register it. So hot does the earth become in summer that a rock or a piece of iron will scorch the naked hand like a live coal.

Yet Death Valley still fascinates one with its stark grandeur. Its painted desert, colour-streaked floor, tinted rocks and canyons, quaint oases, salt beds and sand dunes, pathetic ruins and lonely graves, stir the imagination. Climb Dante's View, a six thousand foot peak at the southern extremity of this vast depression, and a scene is presented which has no parallel on the earth's surface. Below lies the valley, its tan and chocolate-coloured floor streaked with patches of silver white which resemble a river or lake but are in reality a vast salt deposit. Straight in front, enclosing the valley on the west, are the Panamint range of mountains, eleven thousand feet in height, barren peaks blazing with colour — reds, yellows, purples, oranges and greens. Behind them tower peaks still higher, and in the distance, eighty miles away, glimmers the snowy cap of Mt. Whitney, 14,501 feet above sea level — the highest point on the North American continent.

Let us take an imaginary journey with "Dad" down the rough dirt track which leads down to the Devil's Golf Course on the valley floor. From Dante's View this spot resembled a lake. When we approach near to it, we see that it is in reality a vast bed of salt — borax, soda, potash, common salt, mixed in many places with mud — an untamed, sinister place, crossed by a single rough road. The

fairy-like, lacy pinnacles vary from a few inches to two feet and more in height. He was indeed a cynic who named this the Devil's Golf Course.

The salt bed gives way to a pebbly desert floor, hemmed in on either side by savage mountains — the Panamints on the west and the Funeral range on the east. They are all bare of any vegetation, for they are chiefly of volcanic origin — burned, twisted, tilted, rugged, and precipitous, yet displaying colour and forms of great variety and beauty. Pinks, reds and lilacs, purples, yellows, oranges and buffs, greens, greys, and black blend and contrast in enchanting patterns and combinations, now soft and delicate, now bold and vivid, according to the position of the sun. No wonder artists come to Death Valley to paint its colours and record its glorious sunsets.

Right in the centre of the valley we find its only green oasis, Furnace Creek Ranch. Some eighty acres here are watered by a little stream from a neighbouring canyon, thus enabling cereals and vegetables to be grown. There is a small herd of cows in addition to a few burros or mules. Some Deglet Noor date palms have been placed here by the United States Government in the hope of obtaining pest-free nursery stock. A Mexican foreman is in charge of the ranch and his labourers are Panamint Indians.

Just beyond the ranch lie the ruins of the Harmony Borax Works, for Death Valley is famed as the place whence the world obtains a large portion of this valuable commodity and where it was first discovered in 1880. The whole region, in fact, is a highly mineralised area, a great natural chemical crucible, possessing, in particular, valuable and widely used alkalies. The boiler, vats, and pumps,

MR R. J. ("DAD") FAIRBANKS, THE SAVIOUR OF DEATH VALLEY

He has saved many lives in that blistering region of sun, sand, and thirst.

A MOTOR-CAR ATTEMPTS TO PENETRATE DEATH VALLEY, AND GETS INTO DIFFICULTIES IN THE HOTTEST SPOT ON EARTH

as well as the remains of several buildings of adobe, still stand, monuments to the pioneers who braved the valley's hazards in those fateful days.

The discovery of the chemical is a romance in itself. It was Aaron Winters, a canny Scotsman, who first revealed to the world the existence of the precious product.

He and his wife Rosie ran a little ranch at Ash Meadows, just east of the valley. A little bunch grass supported a few head of cattle and there was a patch of garden and an artificial pond fed by a spring. Their only visitors were stray Piute Indians and occasionally a wandering prospector. It was one of these, stopping overnight, who talked to Aaron about borax and told him that if it were mixed with a certain chemical it would burn with a bluish flame.

This set Aaron thinking about some strange, whitish deposits he had seen in that hell pit to the west. He made a two hundred-mile journey to the nearest settlement to secure the requisite chemical, and he and his wife went over into the valley. As the story runs, it was late at night when they reached the spot. Hastily gathering some of the substance that formed a deposit on the ground, Aaron, with trembling fingers, poured on his chemical and touched a match. The far coyotes were startled by his cry: "She burns blue! By heaven, she burns blue!" Less than a month later, Aaron was paid no less than five thousand pounds for his claim, and shortly afterward borax works in Death Valley were established.

In Furnace Creek, as we have mentioned, there is a small oasis. There the labourers obtained their water. They even used to sleep in it, with their heads resting on stones, in order to escape from the heat. Few men could endure this for more than a month or two. Some of them

died of the heat, simply lying in their beds in the bunk house. Many went insane. Many were killed in fights brought on by the state of nerves that the heat engendered. It is almost impossible to imagine the conditions. A writing desk, brought in across the desert, curled, split, and fell to pieces in a few weeks. Meat killed at night and cooked shortly afterward was spoiled by nine o'clock next morning. A handkerchief dipped in water and then held up in the sun dried in a minute or so.

The greatest difficulty was transport. It was 165 miles to the nearest railway station at Mohave, and for many years the journey was performed by burros or mules. The wagons used were the largest ever made and were dragged by a team of sixteen to twenty animals and sometimes more. These teams brought fame to themselves and to the mysterious desert pit, for the creaking wagons and plodding mules proved extraordinarily efficient in the burning alkali waste. When progress demanded more expeditious service, mules were superseded by steam, a slow and heavy tractor of the upright type drawing laden trailers to the railhead. Nevertheless, in the more torrid season the crews suffered terribly, and a man on one of the wagons was found dead with a canteen of water in his hand.

Such were the conditions in which the miners and teamsters toiled, until the Pacific Coast Borax Company and other subsidiary concerns decided it was time, in view of the ever-increasing demand for the precious product and the necessity for attracting skilled workers, that practical steps be taken to overcome the climatic terrors of the region.

First came the construction of the Death Valley Rail-

way, linking up the more important mines with the outside world. The iron road does not actually enter the great basin, for there are no mines in the valley to-day, the more valuable borax deposits having been found in the adjoining canyons. Some thirty-five miles back of the depression, at Death Valley Junction, a civic centre has been erected. This is a modern camp for the mining population literally dumped down in the wilderness. Built of adobe, it has three hundred bedrooms, in addition to bathrooms, gymnasium, billiard room, dining rooms, hall, hospital and operating ward, ice-cream parlour, store, and post office. Despite the great heat outside, all the rooms are kept quite cool by means of cold air passed through them, so that there may be a difference of thirty-five degrees of temperature within a few yards.

An enterprising company has lately built a hotel overlooking the valley, and this is attracting many tourists during the winter months when it is open. The surrounding desert, the mountains and the weird valley certainly offer unique and novel attractions. Just beyond the ruins of the old Harmony Mine are extensive salt marshes, a famous spot for witnessing mirages, those strange desert phenomena. Beautiful lakes surrounded by green trees appear to be shimmering before one's very eyes, so that the amazed spectator finds it hard to credit the tragic contradictions around him — the crude wooden headstones marking the graves of the nameless desert wanderers who "died of thirst." There are certain water holes in the valley, but alas! many of them are impregnated with alkali and the water is undrinkable.

Beyond the treacherous marshes are the sand dunes, great hillocks of shifting sand, reminiscent of the Sahara.

There are many points of sad and historic interest, such as Emigrant Wash, Lost Wagons, Stovepipe Wells, and sites of once flourishing but now abandoned mines. Emigrant Wash is so called because it was there that a party of emigrants perished in their attempt to cross the valley in 1849. At Lost Wagons a borax team was overpowered and killed by Indians in the early days of the industry. Slightly east of the valley, at its northern extremity, is a ranch run by "Death Valley Scotty" — one of the more famous characters of the region. He has more than once declared that gold exists in this weird but awful region, but no one has yet succeeded in finding any.

Notwithstanding all that has been done in recent years in linking the mines with the outside world, the establishment of recognised trails and the erection of signposts, men still get lost in Death Valley as they did when "Dad" Fairbanks first saw it; and according to him they will continue to do so as long as they venture there.

A little while ago a man named Krause started to walk thirty-two miles from the railway to an old mining prospect in which he had bought an interest. He carried his bedding and a small canteen — and no man living could have made the journey as he tried to do. When he disappeared, two deputy sheriffs were sent to find him and of course took "Dad" along as guide. He had a typical experience.

Twenty-five miles out from Shoshone the officers had trouble with their car, and being unfamiliar with its mechanism they were unable to proceed. Panic seized them and they insisted upon starting back on foot in the middle of the day, and would have taken only two little canteens, leaving the large ones because they were too

heavy to pack. "Dad's" objections brought only abuse and the opinion that he was foolish. But they did not know him. When he goes on a man hunt his word is law, like a captain's at sea, and nothing can move his firmness. He took command, told the deputies where to "head in" and made them lie in the shade until sunset.

Then they started back, carrying all the canteens, filled. Through the pitchy blackness of a fearfully hot night he led them unerringly over the long trail to Shoshone. Before reaching there he was doling out water to them a spoonful at a time and their tongues were hanging out. They had been saved from their foolishness in spite of themselves. But they had had a lesson!

An incident of the return that night with the deputies was the picking up by "Dad" of a halter rope and a pair of shoes a mile and a half from home. He told the officers that the articles must be the property of John Hoffman or Frank Harbour. At the store they were identified as Hoffman's and next morning "Dad" located the skeleton. There was money with it but no canteen. Hoffman, who was a man of some experience, had evidently been hunting his burros several miles from camp without water, thinking he could make the journey to Shoshone. Unfortunately, fatal consequences attend even the most trifling error of judgment in that treacherous wilderness.

One morning recently "Dad" Fairbanks saw buzzards circling high above Bennett's Well. Some instinct told him they were about to pounce upon a human rather than an animal. He made a search, found a man who had died wretchedly and whose body he buried there. His name was never discovered.

"Dad" says he knows of only about twenty-five such

graves in the valley. Most of those who succumb are lost for ever. Some are engulfed by the ever-moving white sand dunes that may expose bleached bones years afterward; others are so far from any trails that they are seen by only the howling coyotes, venomous reptiles, and glossy black ravens.

"Dad" Fairbanks went to California from Utah nearly half a century ago. He is a desert man and both he and Mrs. Fairbanks insist that they would live nowhere else. The famous man hunter, long engaged in freighting, mining, and mercantile pursuits in the old camps of the West, is nearly seventy years old, but his friends aver that he can outrun a jackrabbit or walk to a frazzle anybody half his age. He has a swinging stride that spells endurance and distance. In the early days he went of necessity on his quests afoot, on burros, or sometimes on horseback. Now he uses a car when practicable, though it often becomes necessary to walk long distances.

"Dad" is an apostle of peace, but he has a pair of sharp gun eyes and his hands move with lightning speed. He can swing either shooting irons or flapjack irons ambidextrously. Such accomplishments are a necessity out there to a life-saver extraordinary!

And so he will go on to the end of the chapter, one of the race of adventurers who seek out danger because there they can serve humanity.

CHAPTER IV

A DIGGER OF HISTORY

Doctor Thomas Gann's Discoveries and Adventures

CROSS the Gulf of Mexico southerly from Cape Florida and you reach the western end of the long narrow island of Cuba. Cross a rather wider strait and you come upon Yucatan, a strange peninsula in which the rivers all run underground and the forests hide pyramids suggesting ancient Egypt. Follow down the coast south of Yucatan and here is a long strip of coastwise country, the southernmost British possession in America.

British Honduras is perhaps the least known of all British colonies, yet it is by no means the least interesting, for it contains numerous remains of the wonderful Maya civilization. Its capital is Belize, in which town Doctor Thomas Gann held for years the post of principal medical officer. Doctor Gann's passion in life is the discovery, or rather recovery, of Maya records, and every short holiday he could snatch from his work as doctor was spent in the bush, digging or exploring. Since his retirement he has given his whole time to the work, has headed one expedition after another into the wilds, and has written a whole series of fascinating books on his discoveries and adventures. A list of these books will be found at the end of this chapter.

Excavating ruins may not sound very adventurous, and if the ruins are in the sands of Egypt or Persia there

is probably more hard work than actual danger associated with the job, but if you follow Doctor Gann into the recesses of the Central American bush you will certainly have no cause to complain of lack of excitement. British Honduras, Guatemala, and Yucatan, the three countries in which the Doctor has done most of his work, are covered with dense forests and infested by wild beasts, poisonous snakes, and insects of every stinging and biting capacity. In many places there is no drinkable water; the Indian tribes who are the principal inhabitants are not always kindly disposed toward the white man — small blame to them when you consider the abominable way in which they were treated by their Spanish conquerors for centuries. Much of Doctor Gann's travelling had to be done by water, and there are few more dangerous coasts than those of Honduras and Yucatan. The shallow sea is set with deadly reefs, storms are sudden and furious, and the waters themselves are full of sharks and other savage fish, particularly barracuda, which are far more dangerous than sharks. Smaller than a shark, the barracuda cannot bite off the limb of a swimmer, yet with its great teeth, sharp as lancets, it will tear out a great mouthful of flesh and then come back for more. A very curious point about this fish is that while, ordinarily, it is good eating, at certain seasons of the year its flesh becomes terribly poisonous and those who eat it suffer with symptoms of ptomaine poisoning.

It is generally supposed that the wild animals of Central America are not dangerous, and the puma, which is the only large beast of the cat tribe, is a cowardly creature. But there are other creatures in these forests which are highly dangerous, and of one of these attacking a friend

of his, Frank Blancanceaux, who is well known among natural historians for his writings on the fauna of Central America, Doctor Gann tells a curious and terrible story. This gentleman was in the habit of making long excursions into the wilds in search of birds and animals. On one occasion he went up to the head waters of the Mopan River, a country still almost unexplored, his only companion being a Negro servant named Joe. Joe was a big, powerful man, superstitious yet brave, and absolutely devoted to his master.

One day the pair had spent hours forcing their way through thick bush when they came out quite suddenly into a small open valley almost circular in shape. In the centre of this valley was a patch of bush above which rose the straight trunk of a large palm. The heat was intense and the two, tired with their long tramp, sat down to rest under the shade of a wild cotton tree. The breathless air was full of gay butterflies, but the only other sign of life was the lizards darting across the sun-baked ground. Suddenly a curious thing happened. The palm, the head of which rose some twenty feet above the surrounding bush, began to move; its long leaves rustled and shook together as if a gale were blowing. Both stared at the queer phenomenon, and the white man said to the black:

"Joe, go over and see what's up." Joe was not willing.

"Massa me no like to go. Dat *obeah* (witchcraft) for shuah."

Blancanceaux laughed. "Don't be foolish, boy. Go along," he said, and Joe, still unwilling, picked up his gun and went. While he walked slowly across the open the palm still shook and quivered in the same mysterious manner. The black man disappeared into the scrub and

some minutes passed, then suddenly the valley echoed with a series of terrible screams, and Blancanceaux, leaping to his feet, rushed across toward the scrub. Before he reached it the shrieks had died away and all was silence.

Plunging into the scrub, Blancanceaux reached the tree and the first thing he saw was that the ground around its base was trampled down as if by some heavy animal, leaving a clear space of some size. In this lay Joe motionless, groaning feebly. His shirt had been pulled away from his body and his chest and stomach were torn in the most appalling fashion, while his face was ripped open. Blood poured from his wounds and it was plain that he was dying. His master did what he could, but all was useless. Before he died he had a moment of consciousness. "I find de old debbil himself," he muttered. "Him rip me up, den run for bush." Before he could say more death came.

Blancanceaux buried his faithful servant on the spot, then without delay started on the trail of his killer. The trail showed that the beast, whatever it was, was a heavy, powerful creature and it was clear enough to follow easily. Fired partly by desire for vengeance and partly by curiosity to discover a new mammal, Blancanceaux went quickly in pursuit. The tracks led through thick virgin forest and then into the dry bed of a stream, where they became very hard to trace. It was dusk when Blancanceaux found himself at the foot of a high hill. In front was a limestone bluff in which yawned the dark mouth of a great cave, and on the soft mould covering the floor of this cave, Blancanceaux saw for the first time a perfect imprint of the animal he had been following. It was like the thumb and first fingers of a gigantic hand, but each finger was armed with a monstrous claw.

Darkness was falling, and realizing that it was sheer lunacy to attempt to follow the monster into the recesses of its lair, Blancanceaux made up his mind to go back and return in a few days with a force of Indians and plenty of torches. He turned away, but by this time night had fallen and the forest was black as a cellar. He kept on a while, then was forced to camp. When he woke in the morning he had not a notion of his whereabouts, but with the help of a small pocket compass and the sun he got a direction and at last came to the Mopan River, and two days later reached a village where he got men. Then he set out to find the cave of the monster.

He never found it. This country is all limestone and is riddled with caves great and small, so that to find a particular one is as bad as looking for the proverbial needle in a haystack. So the identity of this strange beast has never been discovered. Yet twice since then have come stories of natives attacked by some mysterious beast, while Indians at Arenal have spoken of finding marks on a tree trunk as if some large animal had rubbed itself against it, leaving stiff black hairs adhering to the marks. A country that harbours such unknown beasts is not the safest in the world, but there are many other dangers and discomforts.

One of the Doctor's worst adventures, however, was on water, not on land. He and his man, whose name was Amadeo Esquivel but who was always known as "Muddy", and a crew of five were working along the coast in the Doctor's small motor launch, *Cara,* when they were caught by a furious gale. They got out three anchors and lay to them. But the wind continued to increase in force until in the early morning of the second day it was blowing

almost with hurricane force from the east. By this time they were beginning to feel very doubtful as to whether the three anchors would hold. The wind was coming in great gusts, sometimes easing off, then suddenly rising to a furious blast, and the seas were terrific. The little vessel was leaping like a bucking horse so that it was impossible to stand without holding on to something. Just at daybreak one chain snapped and the launch began to drift slowly but certainly toward the shore. The men got out poles and made desperate efforts to take the strain off the anchors, but the pitching and tossing made their efforts useless, and there was nothing for it but to let the launch drift.

Between them and the shore were a triple row of breakers which had a most terrifying appearance, yet somehow the launch swung through them without capsizing. Then she touched bottom, and rudder and propeller were instantly torn off. Luckily the other two anchors were still dragging, and these checked her so that her crew were able to jump into shallow water and land unhurt. The launch herself was hopelessly wrecked, but fortunately the wind dropped and the Doctor and his men were able to rescue food, instruments, and baggage. They congratulated themselves that they had been wrecked on a sandy beach instead of coral reefs, for in the latter case not one of them would have survived.

So far, so good; but here they were, all seven of them, on a desolate sandy beach many miles from anywhere and no means of getting there. Then Muddy had a brain wave. He remembered that some *chicleros* — that is, men who gather gum for making chewing gum — were at a place called Tancah not very far away, and that these

men would have mules which they might be willing to hire out. So he and the pilot set out for Tancah, and within two days were back with eight mules which had been readily lent by the head of the *chicleros*. The latter had come down himself to see if he could be of any help, and he told Doctor Gann that he had read in a Mexican paper translations of some of the Doctor's articles which had originally appeared in the London *Morning Post*. And so they rode away along the coast to the ancient city of Tuluum, which is still encircled by an enormously thick twelve-feet wall, where Doctor Gann took up his abode in the Castillo, a part of the ancient ruins. His room, reached by thirty steep stone steps, had a great doorway divided into three by two stone columns representing the bodies of Kukulcan, the Maya feathered god. Five miles away live the Santa Cruz Indians in their newer town of the same name, and Canul, the *cacique* or chief of this tribe, came to call. He was thin, five feet four in height, yet tall for an Indian. The Mayas themselves were very small in stature, and these Indians, who are in part their descendants, are all short. Canul was straight as a dart, and though quite old there was not a grey hair on his raven-black head. His eyes were remarkable, large, well apart and very dark, yet with something of the fixed stare of a snake. He never seemed to blink. He wore a purple jacket and white shorts, and on his feet Xanap sandals made of tapir hide with ornamental rolls around the ankles. These were exactly like those worn by the ancient Maya folk two thousand years ago. Three women who were of his party were dressed in sleeveless, low-necked garments, the ancient Maya *kupil,* while the *pik* or skirts which they wore were embroidered with conventional patterns exactly the same

as seen in Maya sculpture. These Indians live outside British territory but have always been anxious to become British subjects, for the English, they say, treat them fairly, and to be *Ingles* is an "Open sesame" to any part of their country.

A strange ceremony was held in the old temple, a curious mixture of Christian prayers and Maya invocations. Doctor Gann was next to Canul and hearing the word *"Ikoob"* said to him, "Ah, you were invoking the ancient wind gods." The chief smiled. "No, Doctor," he answered, "we were only petitioning your God to save you from the winds which have done you so much harm already."

One thing which surprised Doctor Gann was that part of the prayers were intoned in Spanish. The speaker had no notion of the meaning of the words but was repeating them from memory. These Indians, it seems, make the best of both religions. Pressed for an explanation they say, "The Great God, the Madonna and her Son, and the Saints are good; but here in the forest the old gods may still have power." They have a strange relic known as "The Talking Cross," but Canul flatly refused to allow his visitors a sight of this.

Doctor Gann asked him who had built these great temples and Canul answered, "They were built by our great ancestors, but not with tools. In those days Maya priests had powers which they have lost now. When they wished to build a temple they called the great stones together and commanded them to take proper shape and then to arrange themselves in walls and roofs." A similar story is told of the buildings of Stonehenge.

In old days witchcraft was common among the Indians and the "black witch" was so hated and dreaded that her

punishment was a terrible one. If proved guilty she was sentenced to be hewn to pieces with *machetes* (heavy cutlass-like knives) and her remains left unburied to be devoured by the vultures. Canul will not even allow the word *xculya* (sorceress) to be used, and an offender against this rule is punished with a flogging. The natives are, however, still very superstitious.

Exploring in the virgin bush Doctor Gann and his companions, Captain Greening and Mr. Clive Smith, discovered a huge old city which they named Chumacha and which had been lost and buried in the jungle for at least fifteen centuries. The centre consisted of great ranges of terraces two hundred and fifty feet high, faced with stone. Crossing the river in the centre of the town was a stone bridge of which the abutments were still perfect. Digging here the explorers found a beautifully sculptured head nearly life size. It was that of an old man with a large flat nose, thick lips, and slanting, malignant eyes. Its expression was simply diabolical. Instead of handing this over, the man who found it hid it, no doubt intending to steal it. That night the whole country was shaken by a violent earthquake. In the morning the thief, an ugly elderly man, came to Doctor Gann with the head, dumped it in front of him, and announced that he and his companions wanted their wages, for they were leaving at once.

When asked the cause of this sudden resolve the man said that while they lay awake, terrified by the earthquake, the head had suddenly risen up and spoken to them. "You are," it said, "committing a horrible crime by digging up the graves of your ancestors, and to-morrow you must leave work and never return. If you do not you shall die within the year. The old gods have no power over the

Christians, who worship a new god of their own, but they have complete power over you whose ancestors worshipped them." The Doctor had to take a very strong hand, and declared that if they left they would get no back pay. This staggered them so that they decided to continue work.

The Indians believe that the old ruins are haunted and also that certain trees are the abode of ghosts. One night when camp was made in some old palm-leaf huts, Doctor Gann, knowing by experience that these would be full of fleas, went off a little distance and pitched his tent under a great cedar tree. The Indians were horrified, for they believed these to be the special haunt of *stabai,* beautiful but malignant female spirits. But the Doctor, too tired to trouble about such things, went to bed early and slept well until roused by the most terrible roaring and booming, which seemed to come from overhead. It was a fearful uproar, a cross between a lion's roar and a foghorn, and for a few moments the Doctor began to believe that there was really some truth in what the Indians had told him. He looked out and in the dim light of early dawn saw that a big sapodilla tree full of fruit grew next to his cedar. This was the breakfast room of a great ape who, furious at Doctor Gann's invasion, was remonstrating in the only way he knew.

Travel through the forests in which the rivers are found is a matter of very great difficulty. The forest is so thick that in many parts it is hard to move at all. In other parts are swamps, seas of sticky mud covered with low, thorny scrub. The thorns are the worst on earth. Some resemble the "wait-a-bit" thorns of South Africa, but still worse are those of the bull-thorn tree, a small palm covered with sharp stiff spines each about two inches long. Another

tree has every branch covered with small lumps, at the end of each of which is a steely thorn which will drive through leather or anything short of metal.

The path twists like a corkscrew through these horrible bushes, and is roofed with branches which threaten the head of the rider. And while he is dodging these he has at the same time to try and guard his legs from the spine-covered branches below and also protect his hands and face from the lianas or creepers, many of which are likewise full of needle-like prickles. Clothes, skin, and baggage, all suffer severely on such a trail.

Then when camp is reached it probably consists of a few old palm trees standing beside a stagnant water hole covered with green slime. As likely as not the water is charged with Epsom salts, or some similar saline, so that even boiling does little good. Such water is very apt to cause dysentery. The huts swarm with fleas, and Doctor Gann says that he is much puzzled as to what these abominable insects live on during the absence of the *chicleros* who inhabit the huts for only a portion of the year.

There is plenty of game, but it is extremely difficult to find or kill any owing to the denseness of the bush. Around the deserted huts were seen bones of deer, wild pig, peccary, monkey, the water tortoise, and even the *woula,* the boa constrictor of Central America. The water tortoise or turtle is the ugliest and fiercest reptile found in this country. It grows to about two feet in length, has a diamond-shaped head, black and yellow in colour, and jaws of terrific power. Its eyes are cold, evil, and indignant. Once it seizes anything in its jaws, nothing short of an iron bar will break their hold. It has only one enemy, the otter, called by the Indians, the water dog, which catches the turtle by

the tail, drags it ashore and turning it on its back eats it alive, beginning at the tail. One of the best eatable birds is the great crested woodpecker. These birds, which were originally insect-eaters, have changed their habits and become vegetarians. They attack young coconut palms, orange trees, bananas, etc., and do terrible harm.

Insects of every kind swarm. There are mosquitoes, red bugs which burrow into the skin and cause terrible irritation, sand flies, jiggers, doctor flies, horse flies, and batlas flies which when they bite leave a small black scar. Immense black hornets, so poisonous that their sting is dangerous, abound in some parts. At times the party will be almost suffocated by swarms of small bees. These do not sting but settle on the skin in incredible numbers, attracted by the salty perspiration. There are also enormous ants no less than three quarters of an inch long, the bite of which is intensely painful. The only way to cure it is to catch the ant, crush it and use its "innards" as a poultice.

Most pestilential of all is a creature called the "beef-worm." This burrows into the skin as a larva or grub too small to be noticed, but once in place grows rapidly to a fat maggot three quarters of an inch in length. Its body is surrounded by three rows of stiff hairs and when it wriggles about the result is naturally extremely painful to its unwilling host. The worm can be killed by affixing a piece of sticking plaster over the spot, but when this is done the worm must then be removed, otherwise a very unpleasant abscess is likely to result. Add to all these dangers and discomforts the risks of malarial fever, of snake bite, or of accident, together with great heat and possible failure of water supply, and you will be able to form some faint idea of the difficulties that beset the ex-

plorer in the Maya country. One more pest that must be mentioned is the vampire bat, that soundless blood-sucker which works by night and drains the life blood from sleeping travellers. A colony of Indians that settled near the old ruined city of Tikal were, it is said, driven out by these bats, which attacked not only men but horses, mules, even dogs, pigs, and chickens.

Tikal is the largest of all the old Mayan cities so far discovered. Its buildings, too, are still in fair preservation, owing to the solid way in which they were built and the great thickness of the masonry. There are three hills in the centre, each terraced and stone-faced, with their summits levelled. Five large temples were found, the highest of which reaches a height of two hundred and thirty feet. Yet all this mass of buildings, temples, palaces, and pyramids represents only the dwellings of the priests and upper classes. The poorer folk lived in huts of wattle and mud which have long ago crumbled to dust, so it is plain that there must have been an immense population at Tikal in its palmy days. There is pretty good evidence that Chichen-Itza, another Maya city in Yucatan, held at one time a population of a quarter of a million, but Tikal must have been far larger.

The Maya Empire must have been immense and extremely powerful, yet even experts like Doctor Gann who have studied it all their lives find its history full of mysteries. Many *stelæ,* or inscribed stones, have been found, and the dates cut on these stones have been deciphered, but the key to the glyphs, the written inscriptions, has not been discovered. The reading of Egyptian hieroglyphics was at length made possible by the discovery of the Rosetta Stone in 1799. This was a slab of black basalt on which

was inscribed a decree of the priests in three different characters; as one of these was Greek, a key to the others was furnished. At present the date of the erection of any inscribed Maya stone can be deciphered to a day, but of the events recorded upon it investigators remain completely ignorant. Failing the discovery of a Maya "Rosetta" stone — an event hardly to be hoped for — the Maya glyphs, as Doctor Gann says, will have to be elucidated by long and patient work and will require the expert labour of many workers over a long period of years.

If ever the history of the Maya Empire becomes known it will solve some of the stiffest puzzles of the archæologists. Here was the greatest empire of the New World with a huge population and apparently no dangerous enemies. Its people had reached a very high state of civilization, as proved by their marvellous buildings, their astronomical lore, and their picture writings. Their knowledge of astronomy was surprising. They divided the year into eighteen periods of twenty days each, and seem to have calculated eclipses like the Egyptians. Yet the whole of this great empire failed and faded away. Many of its cities had been deserted long before the coming of the Spaniards.

It is known that there were two empires, an old and a new. The old was the southern one; then at some date — we do not know when — this was abandoned and the people moved *en masse* to the north. One theory is that as the population of the southern cities increased, the forest was cut down in order to provide corn-growing land, which resulted in an erosion of the soil which filled up the water holes on which the people depended during the long dry season. A second suggestion is that the whole

of this southern region is undergoing a slow process of elevation which has drained the water from the surface. One thing is certain, that to-day there is a terrible dearth of water during the whole of the long dry season and since the rock is porous limestone it is very difficult to find reservoirs that hold water.

The origin of the Maya Empire is as great a mystery as its end, Doctor Gann has traced a strong resemblance between Maya architecture and art and that of Cambodia in farther India, and has himself visited Indo-China for the purpose of making comparisons. Angkor is the great ruined city of the Khmers, and their history, like that of the Mayas, is shrouded in mystery. Both emerged from the mists of antiquity in the early years of the Christian era, both founded great cities, built marvellous temples, and reached a high stage of civilization. In each case you find the Sacred Serpent, the same narrow rooms, the same type of arch, the same square columns, while a statue of the cross-legged Buddha has been found at Yaxchilan in Central America.

We talk of Columbus "discovering America" in 1492 but of course this is absurd, for the country already had an immense population and in parts a very high civilization. It is fairly certain that the Red Indians of North America were of Asiatic origin and arrived on the American continent by way of Behring Strait at a very early date. But, says Doctor Gann, it seems clear that somewhere in the early centuries of our era there arrived on the shores of Central America a small band of Asiatic immigrants who came from Indo-China, and these, fusing with the Maya people, raised their civilization and left among them traces of Asiatic influence.

The idea of this band of immigrants crossing the wide Pacific Ocean is a most fascinating one, yet there is no reason why they should not have accomplished such a voyage, for the Pacific is, after all, a far less difficult ocean than the Atlantic, and the Chinese junk, crude as it looks, is certainly a more seaworthy vessel than the squat top-heavy craft in which Columbus and his successors crossed the Atlantic.[1]

[1] The authors wish to thank Dr. Gann for his very kind permission to make use of material from his published works which include "In an Unknown Land", "Mystery Cities", "Ancient Cities and Modern Tribes", "Maya Cities", and "Discoveries and Adventures in Central America", published by Messrs. Duckworth. All these are fascinating records of travel and so interesting that once started it is difficult to lay one down until the last chapter has been finished.

CHAPTER V

BY AIR TO AUSTRALIA

Bert Hinkler's Lone Flight across the World

CAPTAIN BERT HINKLER would have been surprised to find himself set among heroes of any kind. This famous airman was careful to explain to all interviewers that there is nothing heroic about flying. He considered flying by far the safest form of travel, and firmly believed that a mere matter of a little flip, single-handed, from England to Australia was a matter so trivial as to be hardly worth mentioning. Quite honestly, he had the strongest objection to being classed as a hero, but since we could not well alter our title, we had just to apologise and let it go at that.

Captain Hinkler was a small man, rather dark, with very bright eyes. He had a quiet voice and manner, and was probably one of our finest pilots. You could not imagine him getting rattled or nervous in any emergency.

His flying experience was a very long one. It began with the War, when he joined the Royal Air Force and piloted Sopwith "Camel" machines in France. Here he became acquainted with many different types of aeroplanes, and, after the War, during the years spent in preparation for his great adventure, became perfectly familiar with all branches of flying.

The story of his famous journey by air from England to Australia is a long series of bitter disappointments leading at last to a great triumph. He had conceived the

idea long before the War, but not until it was ended was he able to set about realizing his dream. Remembering his experience with the "Camels", his first intention was to buy one of these machines secondhand, and fit it out for the flight. With this in view he went to the Sopwith factory to gain technical knowledge, particularly about the fuel capacity of the plane and how best to fit it out for the varying conditions that would be encountered during the flight. At the factory, however, he was shown a post-War plane of a different type, which he saw at once would be far better suited for his purpose. It was a "Dove" machine, a two-seater having an eighty horse-power "Rhone" engine, and was known by the nickname of The Pup.

In 1919 came the news that the Australian Commonwealth was offering a ten thousand pound prize for a flight to Australia. Hinkler finished his preparations and tried to enter his plane. He hoped that Messrs. Sopwith would send him off on his own, as he wished to take a couple of months over the flight and do his own exploring. But Sir George Pearce objected that the route was unsurveyed, and that pilots attempting it would be going to certain death. So Hinkler could not start. It was the beginning of his cruel ill luck.

Then came demobilisation. Hinkler was faced with the choice of going back to Australia for his gratuity, or staying on and taking his chances in England. He decided on the latter course, and the Demobilisation Department allowed him to postpone embarkation. He became attached to the firm of A. V. Roe (Avro), thought out many improvements for their planes, and shortly afterward bought an old Avro "Baby" and fitted it with large tanks for a second attempt to fly to Australia. But again misfortune

dogged him. He took his machine to Croydon late in 1919, and there a meddling mechanic managed to split off part of the trailing edge. Constant trouble was experienced with the magneto, and it was not until the end of May, 1920, that the Avro was at last ready for the attempt.

At four-thirty on the morning of May 30 Hinkler took off from Croydon and set the Avro's head toward the Continent. Nine and a half hours later, he had crossed the Alps and was landing at Turin with a bad leak in his petrol tank. When it was repaired he pushed on, but encountered a terrible storm over the Northern Apennines and reached Rome, only to learn that the war in Syria had started, and that all private flying was stopped. For the second time, through sheer bad luck, the flight had to be abandoned. The little Avro had stood up wonderfully well under the terrific battering of the storm, the petrol consumption throughout the flight averaging thirty miles to the gallon. The battered little plane was exhibited afterward by Avro Ltd. at Olympia, and was a centre of immense interest to visitors at the Exhibition.

Hinkler decided that he required two thousand pounds to finance his trip and set to work to collect the money. He invented a camera out of which he made some small profit and meantime he did an enormous amount of flying. Using his Avro just as you or I would use a car, he and his wife travelled in it all over England. In 1920 his leave was up and he was obliged to return to Australia or else forfeit his gratuity. He crated the Avro and took her with him, and on arriving at Sidney he reassembled the machine and flew off to his mother's house at Bandaberg away up in Queensland. This flip across half a continent he accomplished with supreme ease.

The following year found him back in England, busy trying to collect cash for his big flight. He took part in the Aerial Derby, flying a new Avro, and was doing very well when the magneto went wrong and he was forced to land. The Aerial Derby is a race around Britain. Disappointed again, he set doggedly to work. For five long years he was busy trying out new machines, flying in various races, giving lessons in flying, and gradually adding to his savings.

In 1926 the *Daily Mail* offered prizes for a new utility light plane. It was stipulated that the engine should not weigh more than one hundred and seventy pounds. A. V. Roe designed and built the "Avian" which, weighing empty only six hundred and seventy-five pounds, was yet capable of carrying nine hundred pounds dead weight — that is five passengers. For this machine Hinkler designed a new under-carriage so made that the machine can stand out in the open in a gale of wind, yet will not blow over. This, Hinkler realized, was the best machine yet for his big flight and he made up his mind to own one. But he had not enough money and could not get financial backing. That summer he got a job testing planes across Europe. He achieved an amazing flight from London to Riga, a distance of twelve hundred miles, in ten hours and forty minutes. He also tested seaplanes for the Schneider Cup.

Another experience of this year was an amazing battle for life in mid-air which he and Captain R. H. McIntosh waged against the elements. McIntosh was another flier with a big ambition — to make a non-stop flight to India. Hinkler agreed to accompany him and the two, after making their preparations, left Upavon Aerodrome on November 15, 1927, in a big Fokker monoplane. Their

BERT HINKLER IN THE COCKPIT OF AN "AVRO" 'PLANE OF THE TYPE IN WHICH HE MADE HIS HISTORIC FLIGHT TO AUSTRALIA

Photo Central Press

chances seemed good, for the weather reports were favourable, and all conditions seemed right from a meteorological point of view. Burdened with an enormous load of petrol it was difficult to get the big machine off the ground, but once in the air she travelled well.

Very soon they passed out to sea making for Flushing, and then weather conditions began to change with startling and alarming speed. They ran into fog so thick that they could see neither sea nor sky. Then came wind — wind so furious that it tossed the overloaded machine about like a shuttlecock. They could only know which way the machine was flying by the coloured lights on the Reid Control Indicator, and as for whether she was diving or climbing, the air-speed indicator and altimeter, or height recorder, were their only guides.

The weather grew steadily colder and sleet began to freeze upon their wings, and the air-indicator froze up. The note of the engine was now their only guide as to whether the machine was climbing or falling. They were forced to keep the engine at full throttle, in order to battle against the furious gale. There was not a moment's rest for either; both were forced to do their utmost to keep going. Sleet turned to snow, which blew in drifts into the cockpit and settled so thickly on the wings that it seemed impossible for the plane to remain in the air. Yet descent was out of the question for the men could see nothing. Besides, they had not the faintest notion where they were. And so they drove on through the black night and storm, each moment expecting to crash. Flying at four thousand feet the plane, which was wallowing terribly, suddenly got into a spin and plunged earthward. McIntosh wrestled frantically with the controls, but the machine refused to be

controlled and the earth seemed to be rushing up furiously toward him. Then Hinkler plunged out of the cabin where he had been pumping petrol and came to the rescue. They were barely a hundred feet from vaguely seen tree tops when between them they managed to get the plane out of her spin and start her climbing again.

There were no stars, no sights that could be taken, so navigation was out of the question. All they could do was drive on and trust to Providence. In order to avoid the worst of the storms, they had gone far to the south. Too far, for suddenly out of the mist loomed the cliffs of a huge mountain. McIntosh pulled back the stick, but they were actually skimming the summit of the trees which covered the mountain side before he could manage to turn the machine and head back. Presently they tried again, only to meet another series of cliffs, and when this happened a third time, they knew they must be up against the great chain of the Carpathians. With their great load of petrol it was impossible to rise high enough to clear the summit, so all they could do was to fly round and round and wait for dawn. It came at last, bleak and dreary, but the wind was falling a little and they managed to clear the range and get back on their course. Hinkler got a sight, but before he could take a second, the storm clouds closed in again.

On and on they drove until they reached a point somewhere near the edge of the Caspian Sea. But now the weather was worse than ever and it became plain that the flight to India was out of the question because flying on full throttle had depleted their stock of petrol. But since they dared not land in Russia they determined to turn back and try for a landing place somewhere in Poland.

This meant back-tracking for nearly a thousand miles, and hour after hour the dismal Steppes of Russia rolled away beneath them. At long last they crossed the frontier, then the fog lifted long enough to show an open field beneath, and there they set the plane down, quite uninjured.

You might think that their troubles were over, but this was not so. Up rushed a number of villagers, who glowered at them in a most unfriendly way and then arrested them. Luckily one man could read their credentials and they were released, and the farmer on whose land they had alighted made them understand that he would put them up at his house for the night. What they did not understand was the charge he was going to make, and when the bill came in the morning they had not nearly enough to pay it. When they offered their combined resources — about two pounds — the farmer was furious, and summoned the mayor, who again arrested them.

It was snowing again and they dared not leave the machine out in the weather, so they suggested that they should taxi it down to the police station. This was agreed to, and the farmer, the mayor, and the other men stood back to show the road. The engine was warmed up, the big machine began to move. It shot forward. Next moment it was off the ground and speeding away from the inhospitable villagers, while the crew chuckled at the success of their ruse.

The weather grew worse and worse and it was with great difficulty that the fliers at last reached Lwow (Lemberg), a town made famous in the Great War. The local airmen promised to take care of the machine and the two penniless pilots went off to try to borrow some money from the British Consul. Alas! He was away in

Warsaw. So they just marched into the Cracowski Hotel, had supper, and went to bed. Next day the Consul returned, produced the money they wanted, and all was well. The two had no reason to complain of the hospitality of Poles in Lemberg, and a few days later they were able to fly back to England very disappointed at their failure, yet both determined to make another big flight.

Interest in long-distance flights was stimulated just then by the great single-handed flight of Lindbergh across the Atlantic and the Chamberlin flight to Germany. But these were followed by one disaster after another and no one could be found to finance Hinkler in his Australian flight. By this time he had his machine, but beyond that his whole capital was only one hundred and fifty pounds. But he was sick and tired of waiting and resolved to take the plunge.

The start was made on the raw morning, February 7, 1928. A thick ground fog hung in the heavy air and only four people were present to watch the beginning of the great adventure. They were the manager of the Avro Company, Mrs. Hinkler, and two strangers. A packet of chocolate, a few biscuits and sandwiches, and a thermos of hot coffee — these were the only provision made for the big flight. A last good-bye to his wife and the machine rose easily and vanished into the mist. Of London Hinkler saw nothing, for it was completely hidden under a pall of fog. For many miles he had to wing his lonely way by compass, for most of France was wrapped in chilly mist, and it was not until he reached the Rhone Valley that the air cleared and he could see the country above which he flew. In front towered the snow-clad Alps and he had to rise to eight thousand feet into many degrees of frost

to cross this barrier. A strong head wind slowed his progress, but the engine beat true and strong and it was still daylight when he found himself above Italy. As he passed Pisa the light began to fail, fog formed again over the land, and as the dusk changed to black darkness and a cold wind whined past, the lonely pilot began to feel decidedly blue. The plane bumped badly.

At last the moon rose and Hinkler felt better. His destination was Rome, but when he reached the Imperial City he could not find the aerodrome. Round and round he flew, making S.O.S. signals with a pocket torch until at last he got his bearings and came down at twenty past nine, having flown twelve hundred miles in one winter day.

Four hours' sleep was all he got that night, and very early he was away for Malta, a distance of six hundred miles. A cold wind blew off the Apennines but the country below was bathed in exquisite sunlight. A column of dark smoke curled from the deep crater of Vesuvius and drove away down wind. At midday a second volcano hove into sight, Stromboli, known as the lighthouse of the Mediterranean, and a little later a third, the tremendous pinnacle of Etna, towered against the blue sky. Then away across the sea to drop at half-past three on the aerodrome of Valetta, where he was welcomed by men of the Royal Air Force, had a jolly time at mess, and did not get to bed till half-past eleven.

Next morning things were not so pleasant. A strong northeast wind was blowing and the ground was so wet and soggy with rain that it was a job to get up at all. But up the Avian went and drove away across four hundred and fifty miles of empty sea for the distant African coast. Six hours flying brought Hinkler to Ben Ghazi, where he

landed to cable his friends in Malta that he was safe. Then up once more and away toward Tobruk in Libya, a hop of one hundred and fifty miles. He missed his way, and had a nasty landing on soft sand among thorny bushes at a spot forty miles from Tobruk, but undismayed slept beneath his collapsible boat. Arabs turned up at dawn, and this was lucky, for the thorn bush had to be cleared before the plane could rise. The Arabs did it, but Hinkler had to get rid of a lot of petrol before he could get away. He was thankful to reach Tobruk, where the Italian airmen were expecting him.

Here he got a nasty jar, for he was told that the Egyptian Government refused to allow any airman to cross the country without giving fifteen days' notice. Poor Hinkler was in the same sort of fix as a motorist without a licence and all he could do was to avoid Egypt by flying out to sea, and landing in Palestine. This meant a tremendous round and a great waste of time and petrol. To make matters worse, when he took off next morning he ran into a head wind, which cut his speed by a good ten miles an hour. That may not seem much when a machine is travelling ninety, but it mounts up heavily in a full day's flight. Ramleh, near Jaffa, was his destination, but he failed to reach it and had to spend a second night in the desert. Soft sand, none too nice either for landing or rising, and Arabs — any amount of them. "It seemed to me," says Hinkler, "that all Arabia was at the tea party." But they were decent fellows and in return for cigarettes, manhandled the plane and pulled her to firmer ground. Again Hinkler slept under his boat, and in the morning got off safely. The engine was still going well in spite of many hours' hard work, but Hinkler decided to stay the night

at Ramleh and go over her. Again the Royal Air Force men were kind, and Hinkler did not get to bed till half-past one.

Next day he crossed that tremendous hollow in the bottom of which lies the Dead Sea and winged his way at a great height over miles of burning desert. "You cannot imagine the terrible monotony of such a day," says Hinkler. "Ten thousand feet up in the blue — nothing to see, nothing to do." Sometimes he sang to himself, often he felt like going to sleep. At long last he saw a muddy stream below him. It was the Euphrates, and at four-thirty he landed at Basra, having done one thousand miles in one day.

The next day was almost equally strenuous, for it meant a journey of nine hundred miles to Jask on the Persian Gulf, all across the terrible desert of Arabia. Dust storms raged below, the sea, partly hidden by a veil of heat mist, was like a burnished mirror. He passed Bushire, beyond which immense cliffs rose sheer out of the polished water, — cliffs that looked like burnt sugar, with no trace of vegetation, savage and horrible. "A great way to learn geography," is our pilot's brief comment.

Jask at last, a tiny place with lots of people who crowded round the plane but were not helpful. The British Commissioner arrived and gave him the choice of a donkey or a push bike. There are no cars or horses at Jask. A hot night, little sleep, and an early start. He was hardly away before he found his petrol tank was leaking. For hours he sat at the stick watching his petrol gauge, racing against the leak which must eventually bring him down. But the plane never went better and Hinkler won his race, reaching Karachi in India at twenty to two in the afternoon. The

leak, he found, was caused by the *panting* of the empty tank. He had the sides braced and all was well. He found that he had beaten all records and had made the swiftest journey so far accomplished from England to India.

At Karachi he was told that he must wear a solar helmet to save himself from sunstroke. All very well, but after the first hour of flying he discovered that he was suffering badly. The topee prevented his plugging his ears, and the roar of the engine made his head buzz badly. The long hours of that flight were remembered as one dreadful strain and an everlasting throbbing in his brain. When at five o'clock he reached Cawnpore, after a flight of nine hundred and thirty miles, he was temporarily quite deaf.

Calcutta was his next objective, and he reached the Dumdum Aerodrome early in the afternoon, after a flight of six hundred and thirty miles. Nothing special happened and in the cool of the next morning he was away for Rangoon. One hundred and fifty miles of this journey lay across open sea and beneath him Hinkler saw the most amazing cloud formation that man could imagine. Great gorges among the cumulus masses looked as if their sides were made of solid gold. Rangoon was reached at half-past two and there the Shell Oil people met and welcomed the traveller and gave him a very special dinner.

So far things had gone well, but next day our pilot struck bad weather. He had to fly south to Victoria Point over a country covered with a frightful, choking growth of jungle. Torrents of rain fell, thunder crashed and lightning leaped vividly among the piled masses of purple cloud. When the storm cleared a great cloud of flying ants covered the machine and half choked its pilot. He was

very glad to escape from them and land at Victoria Point, where he found two rubber planters and a large number of coolies. There was no hangar and he had to house his machine under a big tree in fresh torrents of rain. Next morning the ground was so soaked all odds seemed against his getting off it, but at last the Avian lifted and headed away for Singapore. It was a bad day. Storm after storm scourged the forest, and Hinkler had either to rise above the clouds or dodge them as best he could. When he could not the great raindrops struck him with a force that hurt. But there was no returning. It was a case of "keep on or bust." It was a curious sight to see the grey fleeces of trailing cloud caught in the thick trees below. He came down on the race course at Singapore, where the ground was a swamp and the wheels dug in so deeply that only the skill of her pilot kept her from overturning. In the morning he had to get men to push his plane on to firmer ground, and even then the take-off was difficult and dangerous. By Banka, off Sumatra, he flew toward Batavia, still pursued by storms. The weather was worse than ever, and when at last he arrived at Batavia, the whole town was covered with a thick veil of cloud and he was forced to cruise around for two long hours until at last he was able to slip down through a gap and land at the Dutch flying school.

The Dutch flying people were kindness itself, and Hinkler enjoyed a good dinner and a night of real rest before taking off once more. Up and up he drove to ten thousand feet, for the island of Java is a country of great volcanoes, many of them furiously active. High as he flew, he was still beneath the cloud floor, and here he struck a most curious freak of the atmosphere, for the air was drawn

up from below with such force that the plane was constantly sucked upward into the clouds, and even when the engine was shut off she lost no height. At three o'clock in the afternoon he descended at Burma, opposite the north coast of Australia. A crowd of coolies gathered round the plane. Hinkler could not make them understand what he wanted and as they were meddlesome as monkeys he dared not leave the machine. At last the Resident turned up and at once put a native policeman in charge of the plane and took its pilot to his bungalow for a badly needed bath. After supper he went back to look over his engine. The coolies came to help, and so did the mosquitoes; the latter were murderous and the heat most oppressive.

Next day was the last stage of the big journey, a nine hundred miles' flip to Darwin in North Australia, and he started early after a simple breakfast consisting of two bananas. "I had no food in the bus either," he added, "and it was tricky work crossing so wide a stretch of shipless sea." But the engine pulled perfectly, the weather was kind, and at half-past two he sighted Bathurst Island off the Australian coast, and at four-twenty was down at Darwin. He had completed his journey half around the planet in fifteen and a half days, broken all records for such a journey and — more than all — done it without the slightest mishap either to himself or his machine.

Hinkler's secrets were three. The first was that, though so small a man, his powers of endurance were marvellous. He could fly day after day and never get tired. He loved being in the air, and vowed that a plane was far easier to handle than a car. Secondly, he was not only a pilot but a mechanic, an absolutely first-class

mechanic who could keep a motor engine running in a way that was almost miraculous. Lastly, he had a natural eye for country and a sort of instinctive power of driving a machine in a bee-line between two points.

Between 1928 and 1934 many records were made on the London-Australia air route, culminating in the epic race from Mildenhall to Melbourne in October 1934. The magnificent achievement of the winners, C. W. A. Scott and Campbell Black, whose time for the journey of over 11,000 miles was 70 hours, 54 minutes, 18 seconds, makes Captain Hinkler's 15½ days seem very slow. Yet the amazing performances of the British "Comets" and the Dutchmen, Parmentier and Moll, do not detract from the importance of Hinkler's flight.

Since that lone journey in 1928 not only have machines improved, enabling a "cruising speed" of 200 miles an hour to be maintained by planes with a flying radius of 2500 miles at one "hop," but the ground facilities at the disposal of the flier have made high-speed flying easier. Captain Hinkler himself realized that his record was obsolete, and on January 7, 1933, he left for Australia, hoping to create a new record.

It was not to be. Bert Hinkler vanished into the mist and was never seen alive again. Four months later the wreckage of his machine was found in the Calabrian Mountains, in Italy. And sixty feet away were the remains of the missing airman.

An examination of the wreckage suggested that Hinkler had been flying low through storm, and had crashed into the mountain-side. And so, at the age of forty-one, ended the career of one who will assuredly be remembered as among the greatest of all airmen.

CHAPTER VI

TWO HUNDRED DAYS BELOW ZERO

How Captain E. Mills Joyce Won the Albert Medal in the Frozen South

NO region of the earth has attracted so many great explorers and provided the setting of so many gallant deeds and feats of almost inhuman endurance as the great white silence that we call the Antarctic. Ross, Mawson, Amundsen, Shackleton, Scott, Evans, Wild, Charcot — and now Wilkins and Byrd — these are but a few of the illustrious company of noble-hearted adventurers who have risked their lives at the bottom of the world, content to face blizzards, ice, hunger, and death if only they can add a stroke or two to the maps which reveal all we know about the last great blind spot on our maps of the World.

The expeditions led by the men I have named are world-famous. Every one knows that Amundsen was first to reach the South Pole, and that Scott arrived there a few days too late and, with his tiny party, died on the way back. But if you were asked what man holds the record for the longest journey ever yet made in that ice-bound region, could you answer that question? If so, you would reply that the man who can claim the honour is a British sailor who went south under both Scott and Shackleton, and who was awarded the Albert Medal as royal recognition of the greatest march on record. His name is Captain

E. Mills Joyce, A. M., and the journey, whose story we are going to relate as an epic of Antarctic adventure, took place in 1915.

The object of Captain Joyce and his party was to lay food depots for Shackleton between the Ross Sea and the Beardmore Glacier. The lives of the main party, who hoped to reach the Beardmore Glacier from the other side of the world, depended upon those depots, and Joyce and his companions travelled over nineteen hundred miles across the ice fields and spent over two hundred days in terrible weather conditions before the task was completed. Of the six men who adventured, five returned after successfully performing the longest sledge journey, in regard to distance covered, achieved by any exploring party in the history of Antarctic exploration.

To call this journey "Two Hundred Days Below Zero" does no more than indicate the conditions which this little band of explorers were called upon to face and the endurance and pluck necessary to win through. Indeed, probably only the man who has actually faced those conditions can appreciate what those nineteen hundred miles mean. How can words convey the meaning of fearful temperatures which broke the thermometer, blizzards during which it took fourteen hours to cover three miles, and the anxiety and sheer toil of hauling sick men on a jolting sledge through a wilderness devoid of assistance of any kind?

It was in August, 1915, that the great march began. To build the chain of depots, each link sixty miles apart, across the Ice Barrier to the foot of the Beardmore Glacier, it was necessary to haul four thousand pounds of stores on to the Great Ice Barrier, twenty-eight miles south, then to carry three thousand pounds on sledges to

a point a hundred miles south. The third part of the task was to proceed from that point for another four hundred miles due south, laying depots every sixty miles.

Two parties set out to do the job. In one was Mackintosh, Spencer-Smith, and Wild, and in the other, Richards, Jack, Gaze, Hayward, Doctor Cope, and Captain Joyce.

The first month of the sledging season was occupied in loading up the first depot and proceeding farther south. At the end of this first stage the clothes of the men had been reduced to tatters by the wear and tear of sledging great weights, and the Primus stoves — upon the heat of which they depended for their lives — were giving out. A conference was held, and Captain Joyce decided to send Jack, Gaze, and Doctor Cope back to the base, and to carry on with Richards, Hayward, and four dogs.

The task of these three men and four dogs was to haul a sledge loaded with thirteen hundred and eighty pounds of stores a distance of ten miles a day. The weather was in their favour and all went well until the little party reached a point one hundred and twenty miles south of the spot where half their party had turned back. Here Joyce and his companions were joined by Mackintosh, Wild, and Spencer-Smith, the second little band which had set out from the base at the same time.

Directly they met, Joyce had a premonition of trouble to come, for Spencer-Smith seemed ill and unfitted for the hundreds of miles still to be covered. And sure enough, before the combined party had covered fifty miles, he collapsed.

Joyce examined him. Probably before he did so he knew what the trouble was! Scurvy — the dread disease which haunts every explorer who is denied fresh food; the dis-

ease which hampered Scott and contributed to his disaster; the disease which nearly killed Admiral Evans at the end of his longest march, the story of which is related in "Heroes of Modern Adventure." And now scurvy had appeared in the camp of this tiny party of men, who, without fresh food, medicine, or doctor, were hundreds of miles from help, and upon whose completion of the chain of depots the lives of Shackleton's party, approaching from the other side of the Pole, perhaps depended.

In such circumstances the individual must be risked for the safety of the expedition. That is the law of both war and exploration. Captain Joyce erected a tent for the sick man, placed inside it a supply of provisions, and left him, promising to pick him up on the return journey.

It was intensely cold, the thermometer at times touching sixty degrees below zero, but the party pushed on with all possible speed, their thoughts with the poor man left alone in the white wastes, the very silence of which was enough to drive a sick man mad if he were left long in solitude.

The slopes of Mount Hope, at the foot of the Beardmore Glacier, where the most southerly depot was to be laid, were reached at last, the stores were safely deposited, and the little band turned and began the long trek back to food, warmth, and safety.

Four days later they reached Spencer-Smith's tent, to find him very much worse and unable to walk. This would entail hauling him on a sledge and slowing down the pace of the return journey. They calculated that even with this handicap they must travel at least sixteen hours each day if they were to get back in time to save Spencer-Smith and before other members of the party weakened.

They had been covering from fifteen to eighteen miles a day, and were hopeful of being able to find the strength needed for the extra spurt, despite the fact that Mackintosh also showed signs of weakening. With food and warmth, the most powerful magnet in the world to cold and exhausted men, before them, they pushed on until within two miles of the gallant Captain Scott's grave. There their luck gave out and they were overtaken by a blizzard which raged without cessation for fourteen days.

During those comfortless days, on short rations, amid the howling icy blizzards which make the Antarctic the worst climate ever faced by man, the members of the party needed all the strength and endurance that they could command. The close confinement to the tents, with no opportunity of even stretching cramped and chilled limbs, was in itself enough to destroy the courage of all but the strongest. The rest was welcome after the long weeks of sledging, but joy at the prospect of being able to lounge all day in their sleeping bags vanished after the first day, when they found themselves lying in pools of water thawed out of the ice by the heat of their bodies, and realized that at each meal the slender supply of food grew less, and no man could say when the weather would enable them to push on to the next depot.

During the fourteen days of bitter wind and snow the little band — a veritable pin-point in a wilderness of white — wondered what would be the end of it all. If the blizzard continued they must die in their tents, for no man could stand for five minutes in the open against it.

To go on was impossible. To stay where they were was to endure discomforts which would have broken the spirit of lesser men. Each in turn crawled out of his sleeping bag

in the tiny tent and prepared the "hoosh" (stew) while the other two men in each tent curled themselves up as small as possible to leave more room.

Wet and warm, the cook no sooner left his sleeping bag than his outer garments were frozen stiff. In the biting cold — even of the tents — he would get frostbitten while preparing the meal, thaw himself out again, get frostbitten again, say things about the cold, and at last get the stove alight. Usually the air was too cold for even the stove at first, and it would jib a little. Whereupon the luckless cook, with no feeling in his hands or face, would try to discover what was wrong, to the tune of continual grumbling, which his two tent-mates would ignore, knowing that their turn would come soon enough.

At long last the food would be ready, and, hot and steaming, handed round. This done, the cook would make a dive for his sleeping bag and snuggle down in the fur, still damp from bodily heat, to enjoy the fruits of his hard labour — a hot drink. As its grateful warmth pervaded stiff and cold bodies, tempers improved, the cold was forgotten, pipes lighted, and the adventurers settled down in their pools of water to wait for any sign of a break in the shrieking wind without.

For a full week no man stirred from the tents without the risk of disaster, but at the end of that time Captain Joyce decided that the grim alternatives were to face the blizzard or else face certain disaster from starvation. For three days they had been on half rations and there was only one meal left for the dogs. Moreover, none of the party was in good condition; two of them were already sick from scurvy and all were getting weaker with every day that passed without fresh food.

Solemnly, for all realised how serious things were, they ate their last meal of pemmican and packed the sledges, with a wind blowing at fifty miles an hour and the wind-driven snow cutting their faces and making it impossible to see ten yards ahead. So weak had they become that it took three hours to take down and pack the tents and equipment, and when poor Spencer-Smith was lifted on to a sledge, he fainted.

Weary in mind and body, but dominated by the knowledge that at all costs they must push on, the little procession started out into the blizzard, faces turned to the north. For perhaps five minutes or so the sledges moved slowly over the trackless expanse of whiteness which enshrouded their world. Then one of those fur-clad figures that staggered against the howling wind suddenly dropped. Mackintosh, who had for some time showed signs of weakening, had reached the end of his strength and could do no more.

The situation was desperate. To add the dead weight of two men to the load would have made the task too much for the remaining members of the party. Joyce held a consultation with Richards, Wild, and Hayward, at the end of which it was decided to leave Wild behind with the two invalids and all the food they had, which was only sixteen biscuits and four half-ounce cubes of pemmican, while the rest of the party pushed on as fast as possible to the next food depot, about eleven miles to the northward.

It was a grave decision, as Captain Joyce recalled to the writers in these words:

> I was forced to decide upon this course very reluctantly, for the leaving of the sorely-tried little band behind would

mean that Richards, Hayward, and myself would have to return for them on reaching our food depot. This all meant loss of time and the cutting down of rations which, in our weak state, we could ill afford. But to take them any further was not only courting imminent catastrophe, but was a physical impossibility.

To erect a tent for the sick men was a heart-breaking struggle, but at last it was accomplished and the two invalids were stowed away inside. This done, Joyce gave his last instructions to Wild. They were that he was to serve out one biscuit a day each.

The fit party started off, looking back with haggard eyes at that tent which a moment later was swallowed up by the driving snow. On their strength and exertions depended the lives of the three left behind. Only for a moment they gazed backward, seeking to penetrate the whirling whiteness, to see once more the tent which held their comrades, then they turned quickly and urged on the dogs with hoarse cries through blackened lips. The race to food, warmth, safety had begun.

Every step of that march was an effort of will, every yard a torture. After fourteen hours of weary slogging along, they had covered only three miles eight hundred yards. And that with an empty sledge!

In the minds of all was the thought that six weeks before they had passed that way, making ten miles a day while hauling thirteen hundred and eighty pounds!

Pitching camp that night took over an hour, and it was a disillusioned band that crept inside the tent. There was no food for the dogs, and they seemed to know that something was wrong; they remained silent, whereas it was

usual for them to give vent to their wolf howl when being fed at the end of the day.

For Joyce and his companions the night was ten hours of frozen misery. In the morning they dragged themselves out of their sleeping bags and set off foodless, but their pace was no more than a crawl. In fifteen hours they covered only four miles. That night the tent took even longer to pitch, and all three realised that they too, like the men left behind, were weakening. No need to tell them that there is a point of endurance beyond which the human body cannot be driven!

Again the dogs had no food, and, mindful as the men were of their own plight, the wistful look in the eyes of the dogs was almost more than they could stand.

The third day was awful. All were now so weak that Joyce wondered whether they would have sufficient strength to pitch their tent again at the end of it. The cold was so intense that their very insides seemed coated with ice and their bodies seemed to hold no warmth. They stumbled, they lurched, they groped along, but they never stopped.

Joyce and his two gallant companions longed for many things that day. They longed for food, for warmth, for oblivion — they came near to longing for death. But they kept going despite everything, for not only their own lives, but the lives of the three left behind depended upon the food depot being reached. Walking, or rather dragging, one foot after another, became a mechanical process. Just another step, now another — up, down, up, down. Over the worst surface in the world for walking, with clothing worn almost to tatters, in a temperature below zero,

they progressed. Surely few more gallant marches have been accomplished in the history of exploration.

On the fourth day after leaving Wild and his companions they won through and reached the depot. It was a miracle that they saw the flag which surmounted the precious pile of food. To pick up a depot on a bright day is difficult enough, even though one has landmarks to march by, but to pick up the cairn in a blizzard, as they did, is like picking up a lifebelt in the Atlantic during a snowstorm.

The four faithful dogs gave a joyful howl on seeing the flag and started off at a run, dragging the three men off their feet. But the depot was still two hundred yards away, and it took them hours to get over that last stretch, so near the end of their tether were they. Another two hundred yards and they might have died in sight of their goal. As it was, Hayward collapsed before the tent could be erected.

The dogs were their first consideration and the exhausted men prepared for them a meal consisting of two pounds of pemmican and plenty of biscuit. But with canine sagacity, the dogs only nosed around the food at first, not daring to eat ravenously after their long fast. The men took their cue from the dogs. The Primus stove was soon going, but they ate sparingly, for they had been nearly four days without food.

By degrees, as nourishment and warmth did their work, the three men felt stronger. The meal over, Joyce went outside to see how the dogs were faring. There was none to be seen. They had buried themselves completely under the snow to escape the wind which was still blowing strongly and carrying with it icy particles which cut the

face like needles. Those four-footed explorers would not face the blizzard when once safety had been reached, and this will help the reader to realise what that party of half-starved men had gone through during their touch-and-go gamble with death.

For two days the party rested and fed and then Joyce gave the word to harness up and return for the invalids. The temperature was still very low and the blizzard still raged. At first the dogs refused to face the south again. They had nearly died, and the poor creatures wanted to get out of the snow fields and back to warmth and shelter.

By letting them start northward and then slowly turning them in a circle Joyce at length got them going on the track which led to Wild and his sick companions. Hardly had the party set out, however, than Hayward collapsed again.

This gallant man was suffering seriously from scurvy, which now menaced the whole party. Serious as was his condition, it would have been still more serious to delay the relief of Wild's party and the race back to the base. The men had already been out too long for endurance, and every day's delay increased the risk of the invalids never reaching the doctor at all.

Joyce and Richards lifted Hayward on to the sledge and when they camped for the night Richards massaged his swollen limbs.

On they went the next morning, and the next — Hayward getting weaker, and Joyce more and more anxious about the fate of the party. At last they reached the little tent which sheltered Wild and the other two invalids. All were alive but extremely weak.

Yet another conference was held between Joyce, Rich-

CAPTAIN JOYCE SEEKS A WAY OUT OF THE 'PRESSURE ICE' FOR HIS SLEDGES

A photograph which shows the terrible difficulties of Antarctic travel.

CAPTAIN JOYCE, A.M., AT THE END OF HIS RECORD MARCH, WITH THE LEADER OF HIS DOG-TEAM

ards, and Wild — the three fit men. Half of the party was sick and unable to walk a step, and it was decided that the best course lay in pushing with all speed northward until safety was reached, or until they dropped. For they had still a hundred miles to go and three passengers for their one sledge.

For the first time they blessed the blizzard that day, for it came from the south, and with willing dogs and a sail set, they made good headway, travelling until it was too dark to see.

Then the wind ceased, and they had to plod along without its aid. They could only cover eleven hundred yards in five hours, and during another period they did even worse. At such a rate of progress Joyce could see disaster staring him in the face, for they were growing weaker again, so he put it to Mackintosh and Hayward that one of them should remain behind in the tent, as it was imperative to get Spencer-Smith in as soon as possible, if he was to reach the base alive. And Joyce gave them his word that he would come back for the one who was left if he were alive to do so.

Mackintosh volunteered to stay. It was a brave decision, for to be alone in that howling, frozen wilderness — cold, pain-racked, and with very little will to live or hope, is the greatest test of a man's faith and endurance that could be devised.

He was a very sick man, so they made him as comfortable as they could, left him three weeks' provisions, and set to hauling the sledge with Hayward and Spencer-Smith tied on it.

That brave band of heroes — for each one of those six men had risked his life a hundred times during that

great trek — got within twenty miles of the base before Spencer-Smith died. It was a terrible blow to the survivors, but all that was humanly possible had been done. Spencer-Smith had been ill for fifty-four days, and his companions had hauled him on the sledge for forty-four of them. After that effort, to lose him so near to safety was heart-breaking.

In Captain Joyce's own words: "All through that terrible time of trial he showed the greatest fortitude, and the epitaph which I gave him on the cross erected on his snow-cairn grave was just this —

'A BRAVE MAN.'

"That simple wording described him absolutely."

Naturally Hayward, the second sick man with them, was greatly affected by this casualty, but his companions managed to keep him going. Richards, Wild, and Joyce, all suffering from snow-blindness and scurvy, could themselves do little more than falter along, making but two or three miles during a day of fifteen hours.

Nevertheless, step by step, in constant agony and growing weaker every hour, the remnants of the party which had set out two hundred days before struggled over the last miles of the trail and at last arrived at Hut Point.

Most of us, if we had undergone such an ordeal, would have needed a few weeks in which to recuperate. Indeed, for any of those men to attempt to climb on to the Ice Barrier again until their strength had been fully restored was courting disaster. But somewhere out in that white silence lay the sick Mackintosh, and Joyce had given his word that he would bring him in with all speed.

Feverishly the three men set to work to restore their

wasted energy, and such is the value of fresh seal meat in cases of scurvy that thirty-six hours after crawling in to Hut Point in a state of collapse, they were able to set out again. In four days they reached Mackintosh's tent and brought him safely in.

Thus ended the longest march, in mileage covered, ever made by a man in the Antarctic, a march which, as Captain Joyce acknowledges, would never have been completed but for the faithful dogs, who survived the incredible hardships of that journey and brought five of the six men to safety.

For his work as commander of the party, Captain Joyce received the Albert Medal for bravery from the hand of the King. But as he gave up a certain pension as a harbour official in order to join Shackleton and lay the depots, and as none of those men received more than three shillings and sixpence a day for enduring hardships as great as any endured during those same months by men of our race on the battlefields of Europe, no one will say that he was overpaid for the work he did.

Next to the Albert Medal, the tribute to his efforts of which Captain Joyce is, rightly, most proud, is a passage in Shackleton's diary reading:

> I do not doubt that the Bluff Depot will have been laid all right by Joyce. Anyhow, we must stake our lives on it, for we have not enough food to carry us to the ship. Joyce, with his great experience, knows his work well, and we talk of nothing but the feeds we will have when we reach his depot. That depot has been the beacon ahead through these dark days of hunger. Each time we take in another hole in our belts, we have said that it will be all right when we get to the Bluff Depot; and now we are getting towards it.

And again, from the same diary of the great British explorer:

> No more remarkable story of human endeavour has ever been revealed than the tale of that long march. It ranks with the best deeds of Polar exploration.

That was Sir Ernest Shackleton's tribute to Captain Joyce, written in 1917. Eleven years later another intrepid explorer, Commander Richard Byrd, remembered that great depot-laying feat, and before setting out for the great white South in the autumn of 1928, he wrote to Captain Joyce, asking for details of the exact location of the food dumps laid long years before. For in that climate the food keeps good indefinitely "and," wrote Byrd in a letter which the authorities have seen, "those depots which you laid may be the means of saving lives in my expedition."

Thus Captain Joyce and his five gallant companions, without knowing it, were doing more than laying depots for their leader — they were preparing a route to the South Pole which will make easier the task of the next explorer to pass that way — this year, next year, or in one of the years to come.

But now that the aeroplane has replaced the dog team it is probable that Joyce's wonderful record of nineteen hundred miles in two hundred days below zero will stand for all time as an undisputed record of man's longest march in the frozen South and an imperishable tribute to British pluck and endurance.

These men deserved well of their country. To-day only two of them are left. Richards is a lecturer in the School

of Mines at Ballarat, Australia, and Joyce himself still spends part of each year at sea. This experienced Antarctic explorer has more than once contemplated fresh journeys to the Great White South, and although his plans are held up owing to the difficulty of raising funds for equipping a new expedition during years of financial stringency, Captain Joyce still hopes that he may help to put another unexplored region 'on the map' before his days as an Antarctic pioneer are ended. Which reveals once more the truth of the saying that "Once a man has seen the Antarctic he longs to go back again"—despite blizzards, zero cold, perils, and discomforts. Of such stuff are explorers made.

CHAPTER VII

A TAMER OF EAGLES

How Captain C. W. R. Knight's Patient Vigils Were Rewarded

ONE day in the spring of 1927 a crofter was making his way down a lovely Highland glen when suddenly a magnificent golden eagle appeared overhead, and instead of at once wheeling away as this bird usually does at sight of man, it swung down toward the crofter and perched upon a rock close by. The crofter, frightened, threw a piece of rock at the eagle, but the bird swung off its perch and glided after the rolling stone, as if eager to take possession of it. Convinced that either the bird or he himself was bewitched, the man took to his heels and fled.

The explanation is that the great bird was Captain Knight's eagle which, owing to the kindness it had met with in his care, had dropped down in a friendly way to renew its acquaintance with mankind.

The name of Captain Knight is familiar to many lovers of nature and some of our readers have no doubt seen his film of the golden eagle which has been shown in many towns both in England and America. It may perhaps be asked why we include Captain Knight in this book of Heroes of Adventure. It may be said that taking moving photographs of birds is a matter of skill and patience, but that it is hardly adventure. If, however, our readers read this chapter, we think they will agree that it needs pluck of a very high order, as well as patience, to accom-

plish such work. In any case, Captain Knight is a distinguished soldier who won the Military Cross in the Great War. He was selected as sniper to his battalion in France in the spring of 1915, and in 1917 was sent to America as instructor and lecturer to an American Division. He is also a man of great strength and endurance. To swing at the end of a rope from the top of a cliff three hundred feet high, as he has often done, is no job for a weakling; to stand, as he has done, for hours waist deep in chilly swamp water tests every power of body and mind, while few would care to spend a whole day in the topmost branches of a very tall tree filming herons on their nest as he has done.

Then, again, the handling of a golden eagle is a most dangerous business. There is no other living creature in which such enormous muscular power is packed in such relatively small weight, no bird with such terrible strength in its talons. Twice Grampian, Captain Knight's tame golden eagle, attacked him. On the first occasion he was wearing a fencing mask which protected his eyes, yet so great was the force of her blow that he had a black eye for weeks. The second occasion was much more serious. This time the flight was being filmed, so Captain Knight had decided not to wear the mask. Records were obtained of the great bird attacking the lure in mid-air, and then it was decided to film her as she landed on her trainer's outstretched fist. She came magnificently, landing on his extended arm with a force that made him stagger, strong man as he is. Then, without the slightest warning, she shot out her right foot straight at his face. One curved talon drove through his cheek, another through his ear, and the two closed together with the force of a steel spring.

The struggle to free himself was long and desperate, and when at last the hooked claws were forced apart it was necessary to have three stitches put into one cut in his cheek. This wound, and the hole clean through his left ear, had to be disinfected with carbolic and were a long time in healing.

So much for some of the risks incurred by our hero. Now let us tell of how he secured his film.

The golden eagle's eggs are greatly prized by collectors, consequently every eyrie that can possibly be reached is robbed. Then, as the eagle is an enemy to grouse and hares, on many moors it is shot down by the keepers whenever it can be approached. For these reasons it has tended to become very rare in England and it is only in the more remote parts of the Scottish Highlands that it is now to be seen.

For years Captain Knight hoped in vain for the opportunity of finding and filming a brood of young eagles, and he travelled more than two thousand miles through Scotland on vain quests. Three eyries that he found had been robbed of their eggs. At the fourth the female eagle had been destroyed and her deserted nest contained only a couple of addled eggs.

It was not until the spring of 1926 that a letter from a stalker friend in the north of Scotland gave him the welcome news of finding an eyrie with two eggs, and he decided to go north at once and see what could be done in the way of making the longed-for record. On May 20, with a friend, Mr. C. I. Blackburne, he started on a drive of many miles from a tiny railway station across some of the wildest country in the Highlands. The last three miles were beyond the power of any car and must be covered

afoot, but at last their guide pointed to a sheer face of rock some sixty feet high. This was the home of the eagles and the eyrie could be seen with glasses on a ledge some fifteen feet below the summit.

After a tough scramble the friends reached a place a little above the nest, from which they could look down into it. It contained two young birds covered with down, lying on a huge mass of sticks. Food was littered above, four grouse, a young hare, and remains of other creatures. The eagle has a curious habit of decorating its nest, and here were pieces of fresh pulled mountain ash and clumps of green rushes.

Now the question was where a hide could be built from which the doings of the birds could be filmed, and Captain Knight spotted a ledge about thirty-five feet away which seemed an ideal spot. Imagine his disgust when, on reaching it, he found that a large rock sticking out of the cliff face was exactly in the way. To move the rock was his instant resolve, and he and his companion set to work burrowing in the peat with pocket knives to see where the base was. There did not seem to be any, and at last the two men tramped back to the car, drove all those miles back to the hotel, collected their kit, and came back to sleep in the keeper's cottage.

Early next morning they tramped up across the hills carrying a crowbar and a pickaxe and attacked the rock in earnest. It is not the easiest job in the world to balance on a cliff face and use a pickaxe, and in the course of the operations Blackburne narrowly escaped falling. They dug away a great quantity of peaty earth only to find that the rock was part of the cliff itself and that nothing short of dynamite would shift it. Dynamite being out of the

question, the only course was to build their hide on the rock itself. This was only fourteen feet from the nest and Knight was dreadfully afraid that their operations would frighten away the eagles. They collected armfuls of heather and climbed with them to the rock and piled them up. Then at last they stopped for lunch. They had left their food and other properties under a rock in the glen, but when they came to look for them could not find them. There seemed to be nothing for it but to tramp the six miles back to the cottage. They had not gone a hundred yards, however, before they walked straight on their things, and, feeling relieved, they sat down and ate, while at intervals they watched the nest through their field glasses. To their delight, the old female eagle was seen coming back to it. That settled it, and Knight determined to go back at once to the cottage and fetch their hide. Six miles there, six miles back, and on the way back rain fell in torrents!

Then up the cliff again to fix the hide, which is a tent-like arrangement. It was an awful job, for there was no place to drive the stakes, and when at last the thing was fixed and camouflaged with heather it was obvious that anything like a strong wind would blow it down. The weary men waded home in a deluge of rain. In all, Knight covered twenty-four miles afoot that day, besides doing a lot of climbing.

Next morning the friends were off again, heavily burdened with the cinema camera, four hundred feet of film, and two lenses. Reaching the hide they saw the young eagles and several fresh grouse, but there was no sign of the old bird. It took all the morning to fix things up, then Blackburne went back, leaving Knight in the hide.

Hardly twenty minutes had passed before there came the loud *wh-o-o-f* of an eagle's wings cutting through the air, and she came swiftly down upon the nest.

"I think my heart stopped beating," says Knight. "I hardly dared to breathe."

She appeared gigantic as she stood with head held high. But before he could commence filming she spread her great wings and floated away. Knight's disappointment was great, but only a few minutes later back she came, and after looking for a few moments at the front of the hide, began feeding her youngsters. Knight began turning the handle. He ran off two hundred feet then paused to change his painful position. The eagle was moving about on the nest. Knight could hear the snap of the bones of a hare's carcass as she wrenched them apart. He set the camera going again, and before she left had used up every foot of film.

Day after day Knight almost lived in the hide, getting fresh pictures. And as he watched, a very strange drama developed in the nest. Of the two eaglets one was male, the other female, and the latter, as is the case with all birds of prey, was the larger and stronger of the two. She began to attack her brother. She followed him all round the huge nest, which was fully six feet across, pecking him and twisting pieces of skin out of his neck. Once or twice he fought back, but she was far too strong for him and one day she actually drove him over the edge of the eyrie. Knight went to his help and put him back, but it was useless, for in the end the poor little creature's dead body was found lying at the foot of the crag. It is curious that the mother eagle did not interfere to save her nestling. Most keepers and gillies believe that this is a

common occurrence and that the stronger of the two eaglets nearly always kills the other.

But not always, for, after finishing the filming of this nest, word came to Knight of another eyrie at a distance, and here he found two eaglets half grown and living together in a fairly friendly fashion. This nest was on the same ledge of rock where in 1924 Knight had found the deserted nest with two addled eggs; in fact, it was the same nest. Eagles have the habit of using the same place, or rather places, year after year. A pair will have two different eyries and change from one to the other. This particular eyrie was built, like the first, on the face of a rock rising high above the surrounding birches and firs, but it was far easier to photograph than the first. A rocky shelf of fair width was found on a level with the nest and only about twenty yards away from it, and here the hide was erected. Another great advantage of this place was that there was sheltered ground below, where the men were able to camp and so avoid a long tramp morning and evening.

The two young birds in this eyrie were already feathered and almost able to look after themselves, but here, too, the female was much the larger and more powerful and when Knight climbed to the nest itself, she attacked him fiercely, snatching at his hand with her powerful claws. An eagle, it must be remembered, does not attack with beak, but with claws; so great is its strength that, swooping at a hare it will make its talons meet around the animal's spine.

So far things had gone splendidly, but now came a hitch. The old eagles refused to visit the nest. Very early in the morning they brought food and left it for their young,

CAPTAIN KNIGHT WITH THE GOLDEN EAGLE WHICH HE TRAINED FOR HAWKING

YOUNG EAGLES IN THEIR EYRIE NEARLY READY TO FLY

Photo by Captain C. W. R. Knight

which by this time were quite able to look after themselves. Hours were wasted in vain in the hide. It was three days before Knight was able to get the longed-for picture of the old eagle alighting on the nest with a grouse in her foot. The young birds, as we have said, were quite able to feed themselves, and Knight says that they tore the meat with their powerful beaks as easily as if it was so much jelly. One very curious and interesting point about this nest was that there were numbers of small birds about, especially bullfinches and willow wrens. One willow wren sat on a twig quite close to the nest and the young eagles stared at her and she gazed back at them.

While busy with his work Captain Knight had noticed another eagle which at times flew overhead and which had no connection with the birds he was specially observing. He saw this bird fly toward the opposite end of the cliff to that on which lay the eyrie he was watching, and following after it, he suddenly heard the unmistakable *"pee-oo-o"* of young eagles.

Half crazy with excitement, he hurried up the rocks and had not gone far when he saw the old eagle come out from near the top of the cliff. Blackburne shouted that there was no hurry, but Knight did not listen. He went madly up the steep until his heart began to beat so that it nearly suffocated him, and he was streaming with perspiration. He found himself at last on the face of the cliff, but it was far too steep to climb; it rose like a wall and there was not a hand-hold anywhere. There was nothing for it but to go back and make a long *détour,* and this eventually brought him to the summit.

Scrambling through deep heather to where he judged the eyrie to be, he crawled to the edge of the cliff, peered

over, and found himself almost face to face with two immense eaglets which appeared almost ready to fly. The huge nest was on a shelf only six feet below. The shelf was narrow and sloping and the great mass of sticks overhung the edge and was only kept in place by the trunk of a sapling which grew outward from a cranny in the rock. It was a most astonishing discovery — a second golden eagle's nest within three quarters of a mile of the first!

The next thing was to find a place for the hide, and this was not difficult. There was a little grass-covered terrace close to the nest. True, it was narrow, soaking wet owing to seepage from the ground above, and with a dizzy drop below, but Knight cares no more for heights than does a professional steeplejack, and he set to work at once. He and Blackburne cut down some sapling birches to make the skeleton of the hide, draped the material over it, and camouflaged the whole with lumps of turf, heather, and moss. During these proceedings the young eagles were rather disturbed. The male — they were male and female — kept beating his wings. "All right, William. No one's going to hurt you," said Knight, and after that the bird was always known as "William."

Splendid photographs were taken both of the young birds and of the old ones bringing food. One contribution was a mountain hare of a sandy-yellow colour, a very unusual tint for this animal. It weighed eight or nine pounds. Seeing that the young birds had plenty of other food, Knight took this hare away and skinned it. There was an abundance of wild life around the camp and the wild rabbits became quite tame and fed on bread and milk which Knight placed for them. Thrushes sang and—a very

odd thing — one thrush was noticed to imitate the call of the young eagles.

After several busy days taking pictures, it began to rain. Two hopelessly wet days followed. When at last the clouds lifted from the camp below Knight focussed his glasses on the ledge. He could hardly believe his eyes when they told him that there was nothing there. The ledge was empty. The keeper, who had come up that morning, was with him and they both ran for the foot of the cliff. They hardly hoped that the young birds could have survived such a terrible fall. But they had. There was William, frightened but quite unhurt, perched on a ledge, and his sister was sitting close by on the remains of the upturned nest.

Then Knight took on what was perhaps as odd a job as any man ever undertook — the rebuilding of an eagle's nest. He stacked it up as best he could, then placed the two young birds on it. This was a risky business, for both were big enough to injure him badly if they had managed to fix their talons in his hands or face. He finished by collecting the food and giving it to the eaglets, after which he and the keeper retired. Knight spent the rest of the day with the glasses watching for the old eagle, wondering whether she would come back and feed her offspring. It was not until six in the evening that he at last caught sight of her, carrying food. The question now was whether she would find her young in their new position. Knight could hear their curious barking cry, and after a short period of suspense saw her swing downward to the foot of the crag and a few moments later glide away empty-footed.

Now a new hide had to be built, but this was an easy

job, and soon William had become so tame that he actually allowed Knight to stroke his head. Knight and his friend stayed on, because Knight was most anxious to get pictures of the young birds leaving the nest. William was the first to move and he began by scrambling up on to a branch above the nest. It was on July 1 that the longed-for event took place. William leaned forward, launched himself into the air and glided away as calmly as if he had been flying all his life.

For some days William haunted the neighbourhood. Once Knight saw him perched on a tall tree a mile and a half from the camp, with his mother feeding him. Carrying the heavy cinema camera, Knight went plunging across country in the hope of getting a long-range picture. He reached the spot, built a hide and then, if you please, William stretched his wings and flew away. It was some days before William's sister flew and subsequently, after strenuous work, Knight spotted the two birds on some crags at a distance. He followed with the camera, struggling across fearfully rough country, but failed to get a picture. At dawn next morning he was afoot again and this time success rewarded his efforts. The eagles were still on the rock and he actually got a film of the mother feeding them in the open — the first of the kind which any photographer has obtained.

When the picture-taking was at an end, Knight determined to return to the first eyrie, take the female bird, and try to tame her. He knew that otherwise she would be destroyed by the keeper. The damage done to grouse and lambs by eagles is so great that no keeper spares them, once he has found the eyrie. The bird by this time was almost ready to fly and it proved a difficult and risky busi-

A REMARKABLE PHOTOGRAPH OF AN EAGLE'S NEST UNDER A CLIFF-TOP

Photo by Captain C. W. R. Knight

ness to get hold of her and force her into a sack. The sack was placed in a hamper and Knight took her home and started to train her.

A falconer carries a falcon on his gloved wrist, but "Grampian," as Knight called her, was so heavy that he was forced to fix a kind of crutch under his arm so as to hold her. She behaved very well and soon became tame, but in some ways she was obstinate. When Knight thought she had had enough food he would try to take what remained away from her, but she held on with a vice-like grip which defied his efforts, and one day struck at his hand, cutting three deep wounds, which bled profusely. But he stuck to it and holding her with a length of clothesline taught her to fly to a lure. In three weeks she was flying free. She had lost all fear of her master, her feathers had become hard and steel-like, and her strength was enormous. Her grip was such that it almost paralyzed Knight's hand, even through two heavy horsehide gloves.

We have alluded to Grampian's most serious attack on her master at the beginning of this chapter. It was this that decided him to get rid of her. She was taken back to the Highlands and turned loose on a mountain in the centre of the Duke of Sutherland's forests, where, we are happy to say, golden eagles are strictly preserved.

Just before this chapter was sent to the printers the authors received a letter from Captain Knight, written in America, saying that he has tamed a second golden eagle, a male, which is far easier to handle than the one shown in the film.

CHAPTER VIII

ON THE GOLD TRAIL IN NEW GUINEA

R. M. Macdonald in His Blanket under the Stars

AMONG every generation of the British race there are a few, born wanderers, to whom the Goddess of Adventure beckons so insistently that they turn their backs on home, comfort, and kindred, and go out on the fortune trail.

It has been written: "A rolling stone gathers no moss," to which the born adventurer would probably reply by quoting another maxim: "A tethered donkey never gets fat." Whichever statement is true, the rolling stone will not mind, for to him the lure out on the edge of beyond is not wealth, but adventure.

Up in the Yukon, far back in the interior of the real red Australia, off the beaten track in Canada, and in the heart of all the jungles of the world, you will find these men, filling every day with adventure, gambling on the weather or a gold strike with their lives, and, when they lose, either going out without complaint, or struggling on to fight Nature afresh in some other clime.

They belong to the Gentlemen Adventurers of to-day — these rolling stones who cannot be happy under a roof at home — and sometimes we of the stay-at-home world who love to read their stories are apt to forget how much we owe to them for keeping our hearts young and taking us in imagination upon half a hundred glorious, perilous

journeys to half a hundred desolate lands we shall probably never see.

Among all the "rolling stones" whom the writers have met there are none more entitled to add the word "adventurer" to their names than two Scots, Robert and Alexander Macdonald, who have between them travelled enough of the wild spots in search of precious jewels, gold, silver, and other metals, to fill a dozen lives.

Until they told a few of their adventures in books they were almost unknown outside the Royal Geographical Society, for they have both spent more years out on desert trails than at home. But mention their names at a bush camp in the heart of Australia, or high up the Peace River in Canada, or in the jungles of New Guinea, and you will find they are as well known there as the members of the British Government. There they have adventured, thirsted, hungered, and fought the demon Sun; there they have met and talked with other men who, in the face of great hardship, have opened up new wealth and new trails.

For when these rolling stones set out into the unknown, lured on by the whisper of the magic word "gold", the adventure sometimes ends with the establishment of a new township, with some of the little band of adventurers wealthy, and with the others pushing on, unlucky but undaunted, to the next spot on the map where rumour says adventure is waiting.

Robert Macdonald belongs to the latter group. Time and again he has turned his back upon fortune, aware that if he should stay good luck might turn him into an ordinary business man at home. And having sampled the fortune trail he prefers a blanket under the stars to life in the most palatial home ever built. He knows more

about the British Empire — the real empire still unmapped and unpeopled — than any government official who ever lived; so much that he could sit down in comfort and write books which would stir the heart. He has written one or two, but he cannot rest for long at home. A story in a newspaper of a "find" out in some bush country that he knows better than Piccadilly Circus lures him out to the wilderness again. Or his brother Alexander sends him news of a new route he has discovered through some region of head-hunters. Then Robert Macdonald remembers some old adventure, and feels the urge to seek a new one, and knows that he must hurry if he is to catch the next boat for somewhere — no matter where — so long as there is nothing but coral shore, palms or jungle, where it may be found.

An adventure, perhaps, like his amazing journey through the unknown heart of New Guinea with a party of gold seekers as hardened to the trail as himself.

Here is the story. You won't find it in any Government Report, because the real stories — the best stories — which these rolling stones risk their lives to make true are rarely known to any but themselves.

New Guinea, or Papua, is the largest island in the world. It is the Klondyke of to-morrow. Almost daily new finds of gold are being located in its jungle interior, some of them rich enough to attract gold prospectors from all parts of the world. They are the modern nomads, these gold hunters, men who drift across the world and back again, eternally on the hunt for the precious yellow stuff which fascinates as nothing else.

In the early days in the Yodda Valley men made over fifty ounces of gold a day, but recently on Edie Creek in

ex-German territory, double that quantity has been washed out. New Guinea would have made half the rolling stones alive rich before now but for other things, such as fever and head-hunters — natives who have kept the interior safe from the eyes of whites for four generations, and who still regard the venturesome prospector as a foe to be attacked at sight.

Not long ago, Robert Macdonald set out with a party to prospect the foothills of the Owen Stanley Ranges. There were seven whites in the party and a dozen carrier "boys", and they all knew the risk that they were taking, for, shortly before, news had reached Tamata of the massacre of another party led by a certain Macrae, well known in New Guinea.

For a week the party journeyed through country already known. Then they began to ascend the foothills that were the headwaters of the Kumusi River. Discomforts came early, for native bees and leeches made the days unpleasant while at night mosquitoes and jiggers were unwelcome companions.

All were unpleasant, but the bees and the jiggers were the worst, for the bee, in its craving for salt, sucks deep into the perspiring skin and raises painful blisters, while the jigger burrows under the nails and deposits eggs which hatch like magic.

Being experienced adventurers, however, the party sat at night in the smoke of their camp fire, and by day steadily pushed on into the heart of the Papangi country — the region inhabited by the natives who were responsible for the disaster which had overtaken Macrae.

They saw a native track and knew that a village was near. A village meant danger, but the party stayed on for

two reasons. One was that they had struck good gold in the bed of the waterway and wanted to prove its value before moving. Another equally important reason was that they were friends of Macrae and his missing companions and had old scores to wipe out if they met the Papangis.

That night one of the boys, a mission-trained native, came to their camp fire to report that he "smelled Papangi." In other words, natives were about.

A council of war was held. The Papangis were water-fighters. They travelled in canoes and threw their spears without touching land. This fact suggested a plan. It was decided that the party should leave the camp, with logs inside the mosquito nets and the fire burning, and track down the village. If the warriors had set out on a raid, then the white men might with luck capture a tapu priest in their absence and hold him as a hostage to prevent further attacks.

To explain this plan it must be mentioned that the tapu or religious laws of the New Guinea tribes are strange and peculiar. If any man touches anything which is tapu, then he becomes tapu (or sacred and protected) himself. This meant that if only they could capture a priest, the tribe might hesitate to kill them.

Having piled high the fire, the seven slipped away, and keeping to the vegetation made toward the native village. Suddenly they found themselves in a clearing, with the glare of lights coming through a high bamboo stockade.

"We peered through the stockade," relates Robert Macdonald in his book "Opals and Gold",[1] "but the silence was inexplicable. The village was much like other native

[1] Ernest Benn, Ltd., London. J. B. Lippincott Co., Philadelphia, Pa.

villages but larger than any other we had seen, its tapu house being a most imposing edifice, mounted on piles about ten feet off the ground, thatched artistically, and surmounted by a row of carved monstrosities fixed on a gable. Other houses were also large and formed a square, from which radiated lines of smaller dwellings surrounded by cultivated patches of yams, tobacco, and other growths we did not know. Some tree-houses could be seen in the distance but the shadows cast by a row of fires in the square prevented us from seeing the distant side of the village. The square was crowded with fierce-looking warriors silently performing some evolutions round a cluster of poles adorned with mummified human heads which occupied its centre. A number of grotesquely masked beings evidently were in charge of the proceedings, and they seemed to be very efficient in giving silent directions.

"Their masks covered half of their bodies and were all of different designs, mostly tapering to a point and giving them the appearance of pantomime giants. Fibre kilts were the lower garments of the leaders and men, but long streamers fastened in their bushy hair, and necklets of teeth, were the only head adornments of the latter. They were all armed with barbed spears, spiked clubs, and dart blowpipes, and certainly looked capable of making short work of any prospector."

One of the party touched Macdonald's arm. "Watch that fellow — fourth in the centre row," he said.

They were all watching him. The fourth figure was the chief tapu priest — the man whose word was life and death over all that region.

As the hidden party gazed on the weird scene, the

warriors marched off into the darkness, most of the priests going with them. The expedition had probably set out to find their camp, and it needed no great imagination to picture what would soon have happened had they been sleeping inside their nets.

Soon only the women — recognised as such by the flowers in their hair — and the four chief priests remained. It was the white men's chance to counter-attack, and they might have taken it. But at the very moment when the first of them began to climb the stockade, the oldest and most experienced present suddenly held up a restraining hand.

"Do any of you fellows notice anything peculiar?" he asked.

Macdonald did. The chief priest was scratching the back of his right leg — only a small point; but he remembered suddenly that the missing Macrae had had just that trick. It had been a mannerism of his, well known to his friends.

Macrae alive and masquerading as a tapu priest in the very home of the head-hunters! No wonder those seven men stood silent with amazement. And even as they watched came the proof.

One of the masked priests had apparently started an argument with his chief and suddenly the fourth man's fist shot out left and right in the real British way, and the native who had been arguing went down like a log.

"Come on, boys," shouted some one, and over the stockade went the seven adventurers to the rescue.

As they raced across the clearing, one of the remaining priests neatly tripped up the third and sat on his chest. "Glad to see you, boys," he said, and the seven realised

that not one but two of Macrae's party were here, by some miracle, alive and well.

Their story, which they told after tying up the two native priests securely, beggared any fiction ever written.

These two men were the survivors of the massacred party. They had been taken to the village alive in order to figure on the menu on a special feast day, but before that day arrived another tribe from down the river had attacked the village.

During that fight Macrae had saved the local chief from captivity, and the chief, realising that these white men could fight, had not only spared their lives, but made them priests out of gratitude.

Since then they had imitated the magic of the witch doctors to good purpose by curing several members of the tribe with pills made out of soap, from their packs, with the result that they had become more popular than ever.

They had, furthermore, been free to withdraw if they wished, but from that inaccessible spot no two white men could have reached the coast alive without a fully equipped expedition. So they had stayed while seeking a plan to reach civilisation, and before the arrival of Macdonald and his friends, had struck a rich patch of gold which made them more loath than ever to depart empty-handed.

Apparently the departure of the warriors and other priests had not been the preliminary to an attack on the white men; they had gone off on a *sortie* against another tribe upstream, but when the seven returned to their deserted camp, they found their sleeping nets transfixed by dozens of spears — weapons thrown by another tribe coming from the land side of their camp.

Evidently, despite the privileged position of Macrae and Carstairs, his companion, it was an unhealthy spot, even for New Guinea. Arrangements were made, nevertheless, for the boys attached to the expedition to make some trial workings of the gold which Macrae had discovered pending the arrival of the two white "priests" who were to take them up to the village and "introduce" them.

That "introduction" did not turn out satisfactorily, for, the chief, apparently feeling that nine white men, and seven of them with rifles, was a threat to his position, started a treacherous attack. It might have succeeded but at the most exciting moment he came into contact with a dead crocodile, shot when trying to seize the leg of one of the boys earlier in the day.

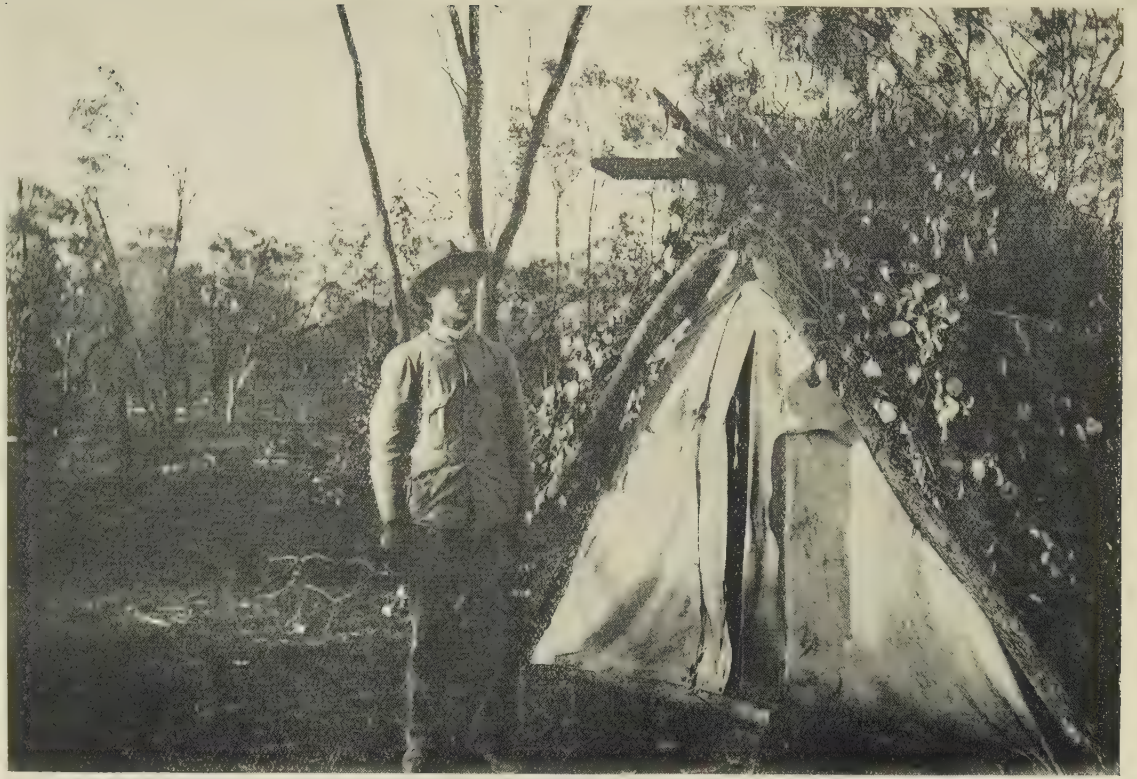
That crocodile was tapu and immediately the warriors saw that their chief had encountered it, they fled back to their canoes, and the chief had no option but to join them or be left to the mercy of the white men.

An unexpected piece of good luck had brought this respite but they had no time to waste. Camp was struck, the river crossed, and, under Macrae's lead, they began to ascend the hills on the other side.

By nightfall they were among towering mountains, clad to their summits with dense, flowering vegetation, but the compasses were useless and the men had to climb trees to get a glimpse of the stars before they could find their direction.

In the moonlight Macrae led them on until they entered a deep valley, the entrance to which was completely shut off by dense vegetation.

"Now we have arrived," said the pioneer. "Eat and



MR R. M. MACDONALD ON THE OPAL FIELDS OF QUEENSLAND

Note his 'home'—the usual 'shakedown' of the wandering prospector.

ing the night, for Macrae considered attack almost certain.

He was a true prophet. On what they had intended to make their last night in that goldfield, the silence was broken, without warning, by blood-curdling yells and a flight of spears crashing into the defensive barrier around the camp. The crackling of the undergrowth and the sound of bodies falling over the wild-vine rope guards which they had fixed to surrounding trees, told them that the attackers were present in force.

Some one flung a lighted brand from the fire into the dry wall of scrub. This done, they snatched their rifles and ran for cover.

What happened next must have greatly surprised the Papangis. For a moment, the only sound was the crackling of the flaming scrub. Then the gelignite charges went off like a battery of guns in action, and a dense pall of smoke descended upon the battle scene.

Under its cover, the nine went back and rescued scraps of the meal they had been eating when the attack began, and the gold which had been stored ready for the journey. Then they turned their backs on the valley of riches and set off across the hills for the nearest waterway.

At the top of the divide they looked back. The whole forest was ablaze. Evidently the enemy was too occupied to worry further about them.

They stumbled on in the moonlight and reached the waterway. Following it down, they joined a larger stream and found an easier passage along its crocodile-infested waters. Before sunrise they came upon a large river and the carriers smelt a native village in the darkness.

It was a village that Macrae knew, and while the seven

kindled fires along the bank to attract the crocodiles, Macrae and Macdonald swam across and returned with canoes which they had appropriated, undetected. The precious gold and scanty supplies saved from the camp in the hills were put aboard and they pushed off, letting the current carry them toward safety.

The end of that adventure is best told in Robert Macdonald's own words, as related in his book.

"Four days later, near sundown, we were astonished to hear a voice hail us in English from the bank. 'This way, boys,' the owner of the voice called. 'This way to the new Eldorado. Howling Dingoes! It's Mac.'

" 'How far are we from Tamata?' asked one of the party.

" 'Tamata is at present nearly deserted,' replied the man. 'This is the latest find, discovered since you left; there are forty men here already and more coming. We've got a second Yodda Valley and — but where on earth have you come from?'

"We were now alongside. 'From the land of gold, old man,' Mac replied, gripping the old-timer's hand! 'From over the mountains of the moon, and from the land beyond the shadows; but we're hungry.' "

Safe that night in the latest gold-mining camp in New Guinea they slept soundly, and next day sent their gold to Tamata by petrol launch, and with it went two members of the party — one with fever and the other to look after him.

The rest remained in the new camp, meaning to return to the Papangi country. But they didn't, for like true rolling stones, they presently decided that even the thrill of finding limitless quantities of gold cannot last, and

before many weeks had passed some at least of them were looking for opals in Queensland for a change.

Most of that party are still travelling. The gold is up there in the mountains, but as long as they have enough with which to reach the next adventure they will not worry. And if you remind Robert Macdonald of his escapes from death in trackless New Guinea, he will probably begin to talk about some other equally astounding adventure.

For like all the glorious company of true rolling stones, he has had so many that they have almost ceased to thrill him. He only knows that he could not do without them — that he wouldn't have missed the mosquitoes, the fever, the torrid heat, and the thrill of adventure if you offered him all the gold in the Bank of England. Some men are made that way.

CHAPTER IX

CHEATING DEATH IN THE FROZEN SOUTH

Sir Douglas Mawson's Greatest Thrill

EARLY in May 1929 Sir Douglas Mawson, the famous Australian explorer, sailed from England *en route* for Australia, there to complete his plans for taking a new British expedition to the Antarctic.

This latest British expedition to the Great White South — the fourteenth band of adventurers to carry the Union Jack into those inhospitable regions since the voyage of the *Southern Cross* in 1899—spent the following winter (1929-30) in the Antarctic before returning. Toward the end of 1930 Sir Douglas Mawson went back to complete the second section of his task, and further exploration and scientific work was carried out.

Down amid the ice-fields which fringe the unknown heart of Antarctica Sir Douglas Mawson and his fellow-voyagers were continuing the work of the 1911–14 expedition, of which he was the leader. The achievements of this latest British Antarctic expedition have brought nearer the day when the whole coastline of the region known as the Australian sector, which lies south of that continent, between the Ross Sea and Enderby Land, will have been explored and charted—a matter of increasing importance to the Australian Government. The expedition also made surveys concerning the commercial possibilities of whaling in those waters.

To enter the ice-fields which stand sentinel over the

world's end a stout ship is needed. Not more than a dozen ships afloat to-day would stand any chance against the relentless ice. In this respect Sir Douglas Mawson's latest expedition was very fortunate, for the British Government lent him the *Discovery*, Captain Scott's old ship, one of the veterans of the Polar seas. If any ship could be counted on to face the perils of the ice and come back safely, that ship was the *Discovery*.

Amid the perils inseparable from exploration in that blizzard-swept region, however, success or failure often depends more upon the leader of the expedition than upon any other single factor. That being so, one may prophesy that the full results of those two voyages will provide valuable scientific and other material for future expeditions which go to the Antarctic. For Sir Douglas Mawson is one of the most distinguished living explorers—a man who not only knows the Great White South in her most relentless moods, but who had already, before he set out again in 1929, experienced adventures enough on the Ice Barrier, the mere telling of which would fill a larger book than this.

His first journey to the Antarctic was as a member of the Shackleton Expedition of 1907, when he made several long sledge journeys and was one of the first party to climb Mount Erebus, the towering ice-covered mountain that rears its head 13,500 feet above the plateau.

His next exploit was to set out, accompanied by Sir Edgeworth David and Doctor Forbes Mackay, to discover the South Magnetic Pole.

The little band of intrepid explorers achieved their object after a journey of over twelve hundred miles of sledge travelling, in itself a great feat of endurance.

It was during this journey that Mawson first realised the possibility of further land exploration. Outposts had been thrown ashore by former expeditions, at Cape Adare in the east and Gaussberg in the west. Between them lay a vast region far away from the track of any former expeditions.

Upon the return of the Shackleton Expedition in 1909, Mawson at once resolved to go south once more in order to penetrate farther into the mysteries of the unknown region. To do so meant facing once more the zero temperatures, blizzards, treacherous ice fields — a hundred dangers, but the fascination was too strong to be resisted, and as soon as he could gather the necessary funds he purchased the sealing vessel *Aurora* and organized the Australian Antarctic expedition of 1911–1914.

With stout hearts and high hopes the shipload of explorers sailed away. As the coast line of Australia faded into the mists of evening, and the *Aurora* turned her bow to the land of ice, how were those aboard to know that she carried two of that gallant band to their deaths upon the Polar trail, and that another — Sir Douglas Mawson himself — before he saw the shores of his homeland again was to face death in its most painful form alone in the awful silence of the empty south and escape its cold breath only after one of the most terrible ordeals experienced in the history of exploration? This ordeal can only be compared with those faced by Captain Joyce,[1] by Rear Admiral Evans while with the Scott Expedition,[2] and by the ill-fated Captain Scott himself.

Before relating the story of this ordeal a word or two

[1] See Chapter VI.
[2] See "Heroes of Modern Adventure," Chapter VI.

may be said about the conditions under which sledge journeys are made in the Antarctic. It is so easy to write, "They loaded up the sledges and covered fifteen miles that day," but the reader who knows only that much cannot guess what it means to cover hundreds of miles, in terrible weather, without fresh food, and in constant peril of cold, snow blindness, and other dangers, in a land where one slip, one little mistake, may send men to a terrible death or leave them to the lingering tortures involved in the endeavour to struggle on against impossible odds.

During sledge journeys the only shelter available as protection against the worst blizzards in the world is a light tent just large enough to accommodate three men. Each man has a sleeping bag of reindeer skin, it having been found that fur clothing taken off in the morning upon rising, is frozen too hard to put on again when night comes. The tent is supported by five bamboo poles, and is secured against the winds that sweep across the ice fields by piling snow against the outer rim.

Before a party sets out, provisions are carefully weighed out — so many ounces per man per day — and then packed in canvas bags, each containing rations for three men for a week. By this means it is not possible to eat too much at the beginning of a journey without knowing it. Only one bag must be opened each week.

Cooking is done by a Primus lamp burning paraffin, and the only saucepans carried are of aluminium, each of which when filled with ice gives just three pints of liquid.

Sledging is a hard game at the best of times and every ounce of load counts, so before a start is made everything is cut down to the smallest possible compass. The sledges measure twelve feet long by two feet wide, and they are

SIR DOUGLAS MAWSON (SEATED) WITH STORES DUMPED ASHORE BY THE EXPEDITION SHIP BETWEEN GALES

A DOG-TEAM IN A TIGHT CORNER IN THE ANTARCTIC

The loss of a similar team brought Sir Douglas Mawson face to face with death in the ice wastes of the Great White South.

drawn by dogs or men. Sails are carried which can be hoisted to lighten the labour of hauling when there is a light following wind.

Absolute necessities only can be taken, so before starting out the food is checked and rechecked, distances out and back are worked out carefully to make sure there is no error, for should the party meet disaster the men's lives will depend upon what is packed upon the sledges; there are no other means of subsistence for them until they return.

Everything is planned with meticulous care. Scientists at home have advised upon the rations needed; the stoves, tents, sledges, everything, have been tested again and again. It is difficult to believe that anything can go wrong. Usually it doesn't, for before a man goes south he is as fit as a fiddle, and before he goes on a long sledging journey he is usually experienced in ice work. But if something does go wrong — if some sudden peril threatens the little band — then death, grim and relentless, dogs their every step and is ever near — as near as it was to Douglas Mawson during the terrible journey whose story we are now to relate.

Three men are trekking into the interior of the Antarctic Continent. With them are sixteen dogs hauling three sledges loaded with nearly two thousand pounds of food and equipment. Slowly, patiently, they are travelling over the rugged surface of the ice, the only sound being the crack of the whip and the shout, "Mush, boys, mush", which urges the dogs forward.

The three men are Douglas Mawson, Doctor Mertz, and Lieutenant Ninnis. They are weeks out from their base, but the weather is good and all goes "according to

plan." And they are experienced explorers who do not worry if the trail is long. Day has followed day without incident, each filled with the same strain of pushing onward. From time to time they have found themselves in a vortex of crevasses — cracks in the ice, often covered and concealed with a light bridge of snow. Sometimes the dogs fell through these crevasses, but the harness and sledge held them up and they were rescued none the worse.

Lunch at twelve noon. Camp at six for the night. Onward, onward, the temperature steadily rising and the sun quite warm for the South. But those crevasses are treacherous and so Mertz is ahead on skis to guide the sledges safely forward and to give warning of any danger. This is called "making the trail", and as the fate of the party and the sledges may depend upon due notice of danger, it is a responsible task.

One day Mertz stopped, and turning to face those behind, held up his ski stick — the signal for danger. Next to him came Mawson, who looked around for signs of a crevasse, but found no irregularity in the ice and went on. Ninnis, the third man, was walking beside his dogs attached to the last sledge. He had heard the warning and on reaching the spot indicated had swung his dogs round in order to cross the danger zone squarely and quickly.

A few moments later Mawson saw Mertz stop and look back. Something in his attitude and the stillness of his figure caused Mawson to turn in his tracks. Behind him, where a moment before had been Ninnis and his dog team, was nothing but an empty expanse of glaring white snow. Third man, dogs, sledge — all had disappeared as surely as though the earth had swallowed them up.

The dread phrase must have occurred to Mawson at

that moment, but it was the ice which had swallowed them, not the earth. That silence, that empty waste, could mean but one thing — tragedy, sudden and complete.

For a moment the two survivors stood rooted to the spot. Then they hastened back along the marks of their trail, thinking that perhaps a dip in the snow obscured the view. A forlorn hope. The only thing that met their eye was a gaping hole, eleven feet wide, where the snow bridge hiding the crevasse had fallen in and carried Ninnis to his doom.

The two agonized men leaned over and shouted into the black abyss below. No sound came back, except the whining of a dog whose fall had been broken on a shelf one hundred and fifty feet below. Deeper down they could dimly see the tent and a package of food which had been strapped on the sledge, but these were far beyond their reach — the only rope with them would not stretch half the distance.

For hours they stood by that chasm of death, shouting until they were hoarse, but no answering sound came back. In such moments any action is a relief, however perilous. Had they possessed a longer rope, Mawson would have descended into the blackness. As it was, they were powerless. Heavy at heart, they at length turned mechanically to take stock of the situation.

It was bad enough. Practically all the food had been packed upon the lost sledge and had gone with it. There had not been one chance in a thousand of a sledge coming to grief on a trail over which two equally heavy sledges had already passed safely. Yet the almost impossible had happened and the survivors found that they were left with barely ten days' provisions for themselves and nothing

for the dogs. And they were then three hundred and twenty miles from the nearest food point!

The position was one of extreme peril, but the shock of Ninnis' death affected the survivors so deeply that they could not think about the lost food. One more shout into the chasm, one more echo and silence. Then Mawson read the burial service, and Mertz shook him by the hand with a brief "Thank you." Then, without looking back, they both hurried away, the dogs were harnessed up, and once more they took the trail.

Only a few hours before their hearts had been light at the prospect before them. Now it was to be a fight with Death, and Providence would decide the issue. There were only six dogs left, and those miserable animals — the thinnest of all. The best dogs had gone with Ninnis, also other indispensable articles, including, in addition to most of the food, the tent poles. Spare poles had to be improvised from sledge runners, making the task of erecting the tent a long and tedious operation.

Anxiously Mawson reviewed their prospects. Providing the dogs were eaten, there was still a fighting chance of winning through. Day after day they struggled on, while one dog after another collapsed. Their flesh was stringy and musty, without a vestige of fat, but the two men managed to eat it. At last the sole remaining dog collapsed. They carried its body on the sledge for some time, then its flesh was used to keep them alive.

How carefully they ladled out the emergency rations during those terrible days! Sledging is a long and hungry job. At the end of the day the sledge had to be unpacked and camp pitched. Then the cooker was filled with snow, and the Primus stove lit — often no easy matter for men whose

fingers were blistered with frostbites. The dog meat would be placed in the boiling pot. The scanty allowance of biscuit would be served, and then the meal began. Not a crumb was wasted. Sir Douglas Mawson has related how, in order to ensure fair division of the precious food, the two men, after dividing the ration, would turn their backs and then one would choose the portion on the left or right, as the case might be. Thus they avoided jealousy, for man becomes very primitive when he is hungry and short of food.

Day after day they struggled on in this fashion. When New Year's Day dawned they were still amid the eternal whiteness, and on that day a new danger appeared. Mertz complained that the dog meat was not doing him any good and suggested using the ordinary sledging food, which they had been holding back for emergencies.

Twenty days after the loss of Ninnis, Mawson realised that Mertz was really ill. Actually he was already sinking from sheer starvation, for the little food he ate was not doing him any good. Gradually he grew worse, with pains in the abdomen. Then he collapsed, and further progress was impossible, so Mawson pitched tent and settled down to nurse him. It was hopeless from the first. Mertz needed doctors, medicine, warmth, nourishing food — and none of these things was available. Mawson did what he could, but how little it was! The end came suddenly. Mertz had several fits and passed away on the eighth day after his collapse.

For hours Mawson lay in his sleeping bag in a state of exhaustion. His own condition was now so bad that he felt he might also collapse at any minute. The gnawing in his stomach had developed into a torture. His toes had

commenced to blacken and the nails had worked loose. And added to all, he was alone and almost without a crumb of food in a world of silence. Few men have ever faced such a catastrophe and lived to tell the tale. No wonder Mawson decided that there was little hope of reaching headquarters. Having decided that, it would have been so easy to give in, to lie inside that warm sleeping bag and wait for the end. But a man without pluck does not go to the Antarctic, and with every bone aching, Mawson crawled out, wrapped his dead comrade in his bag, piled blocks of snow over his body, and raised above his tomb a rough cross made out of two sledge runners.

This sad task completed, he set to work on the sledge, sawing it in halves with a pocket tool. From the discarded half he made a mast; then he cut down the load to the barest necessities for one man. A last look round, the reading of the burial service over a second comrade on that grim journey, and he was ready to set out again.

Before moving, he took his position and found that he was about a hundred miles southeast of winter quarters. How short a distance for the vigorous men who had started out, but what a journey, in that bleak land, for a cold and famished man.

On January 11 he started upon the long, lonely trail. It is hard enough when there are companions to talk with — the silence of Mawson's utter loneliness must have been a nightmare. After travelling for a mile, his feet became so sore that he had to stop and examine them. They were blistered and raw. He smeared them with lanoline, bandaged them, and put on six pairs of socks. Over these he placed fur boots and crampons — steel-cut to give a

foothold on the ice. Thus shod, and in constant pain, he struggled on day after day as though in a dream.

He was dreaming of the food he never expected to taste again when on January 17 he found himself dangling into space at the end of his harness. He had fallen down a crevasse, and above, the sledge, which had broken his fall and kept him in the world, was creeping nearer and nearer to the edge of the chasm. Helpless, spinning in space, he waited for the end, but the sledge stopped. Providence had given him another chance.

It was a small chance, considering his weak condition, but he seized it. A great effort raised him to a knot in the rope. To this he clung while he gathered strength to reach the next knot. At last he reached the overhanging snow lid of the crevasse, into which the rope had cut, and thought himself safe. But just as he was clambering out, a further section of the snow lid gave way, and once more he fell the full length of the rope.

Exhausted, weak, and chilled, for his hands were bare and pounds of snow had fallen inside his clothing, he hung there with a presentiment that all was over. His strength was fast ebbing; only a supreme effort could save him and in a few minutes it would be too late. At all events, he would do his best, and suddenly new power seemed to be given to him. Inch by inch he struggled to the surface and at last emerged feet first, still holding on to the rope. He painfully worked himself out until his body was extended at full length on solid snow. Then, and only then, did he dare to relax his hold on the rope.

For an hour he lay exhausted, wondering whether he would be strong enough to get going again, and whether the struggle with death was worth while, after all.

> And though you come out of each gruelling bout
> All broken, beaten, and scarred,
> Just have one more try — it's dead easy to die,
> It's the keeping-on-living that's hard.

The last of these lines of Robert Service express what must have been Mawson's conviction. Was it better to enjoy life for a few days, sleeping, and eating the last fragments of provisions, or to plug on again in hunger with the prospect of plunging at any moment into eternity? Suddenly a great idea occurred to him. He would construct a ladder from the Alpine rope, one end of which he would secure to the bow of the sledge and the other he would carry over his left shoulder, loosely attached to the sledge harness. Thus, if he fell into a crevasse again it would be easy, even though weakened by starvation, to scramble out by the ladder, providing the sledge were not also engulfed.

No time was to be lost, and as soon as his strength permitted, Mawson struggled to his feet. Day after day he pushed on through the wilderness of crevasses. Many times he broke through the snow lids, but each time he fell into a crevasse the ladder proved trumps and he climbed out without difficulty. On some days only two or three miles were covered. It was gruelling work.

At last came the day when the three thousand feet crest of the plateau was crossed and Mawson looked down on Commonwealth Bay and safety. And on the morning of January 29, when the last carefully hoarded scrap of food had been finished, something loomed up through the drift of snow. A miracle had happened! A search party from the Expedition had laid a food depot on top of a snow

cairn. A bag of food and a tin containing the bearing and distance from Aladdin's Cave, the nearest inhabitable refuge, twenty-three miles away. The letter in the tin had been written the day before and contained news that the Expedition ship had arrived and was waiting in the bay.

It was a terrific moment for the man who had cheated death by inches. Without that food depot it is doubtful whether even his indomitable pluck would have carried him through, for there is a limit to the powers of endurance of even the most hardened explorer, and Mawson had reached it — had passed it.

He rested by the depot and with plenty of food soon found fitness returning. He started out upon the last lap of his journey, but soon found that his trials were not ended, for, being now without crampons, he could not stand up in the wind on the slippery ice slopes. This caused more delay, but necessity is the mother of invention; he cut up the theodolite box, stuck in some ice nails, and with these improvised crampons he struggled on for six miles. Then the crampons broke down, and he had one more narrow escape down a crevasse. But luck held, and on February 1 he reached the Aladdin's Cave depot safely, and found inside luxuries which had been brought from the ship and which he would not have exchanged for their weight in gold at that moment.

He had, it proved, only just reached safety in time, for the very evening he arrived a blizzard began which raged with unabated fury for over a week, reaching hurricane force. In that depot it only meant lying low — but out there on the ice slopes it would have meant death.

At last came the lull in the storm, and he set out for the winter quarters of the Expedition. In two hours he sighted

it. Figures loomed up in the distance — the first human beings he had seen for weeks. Then over the hill came six men, running, breathless. The sole survivor of that journey was helped along to the hut, where preparations were being made to spend another winter ashore. And even as he arrived, Mawson saw the *Aurora* sailing away to the west to pick up eight men who had been landed fifteen hundred miles along the coast, to return the following spring.

Thus ended one of the greatest feats of endurance and courage in the history of Antarctic exploration. Who will grudge their niche in the Temple of Fame to heroes who face such conditions, lured on by a passion for adventure and ennobled by self-sacrificing devotion to their comrades and the great causes that they serve.

CHAPTER X

THE LOST WORLD

Doctor McGovern's Journey into the Unknown

TAKE the latest map of South America and run your eye up the mighty Amazon River for a thousand miles to its junction with the Rio Negro, which comes in from the north. The Negro, or Black River, is one of the greatest rivers in the world, being in many places fifteen miles wide, but the interesting point about it is that the country through which it flows is the least known part of the earth's surface. The mouths of its many tributaries are marked upon the map, but the streams themselves are merely indicated by dotted lines, telling that their actual courses have never been explored or mapped. For hundreds of miles on either side the map is blank — not a town, a mountain, or anything else is shown. Here is the country in which Conan Doyle pitched the scene of his famous story "The Lost World", but it is not so much a lost world as an undiscovered world. An area so big that the whole British Isles might be dumped in it and lost is still virgin field for the explorer.

It was into this country that the hero of this chapter, Doctor McGovern, made the amazing journey we are now briefly to describe.

William Montgomery McGovern is an Ulsterman who was born with a passion for exploration. He is a tall, slim young man who, though he looks almost frail, must have a marvellous constitution, for he alone of all his party

managed to withstand the terrible fevers and other diseases which slay almost every European who endeavours to penetrate these hidden and mysterious wilds. A man, too, of infinite tact and kindliness, for he was able to get on friendly terms with Indian tribes who hate the whites and as a rule kill all invaders of their territories.

Doctor McGovern's first great journey was a visit to the forbidden city of Lhassa, the capital of Tibet. The law against strangers is still enforced with vigour in Tibet, and McGovern knew that even if he got in he might never come out alive. He went disguised as a coolie, a native servant. In order to stain his skin he had to strip and stand naked in an Arctic blast while he was painted all over with a mixture of walnut juice and iodine, and since his eyes are blue he was obliged to discolour them by having lemon juice squirted into them. Any one who has ever got even one drop of lemon juice into his eye will realize what an agonizing ordeal that must have been. Dressed in only the thin cotton garment of a coolie and carrying a very heavy load on his shoulders, he tramped with bleeding, blistered feet over the tremendous passes of Tibet through snowdrifts often breast high and with no other food than the dried grain and raw meat which is the diet of the Tibetan servant. The food made him desperately ill and when at last, after many perils, he again reached England, he had to undergo a serious operation.

As soon as he was well again, he made preparations for his South American journey and in May, 1925, set off from Liverpool in the Booth liner *Hildebrand,* which took him not merely across the Atlantic but right up the Amazon as far as Manaos. His only companion was Männling, his camera man.

A TYPICAL SCENE ON THE AMAZON

Showing a riverside trading-post and the dense jungle which covers the land.

Photo G.P.A.

An odd point about the Amazon is that its immense mouth is so shallow and so blocked with islands that steamers have to pass in by a sort of back door through the mouth of the Para River. The back door is deep enough for liners but in places so narrow that a big ship has her sides brushed by the branches of the great trees growing on the banks. For days the liner steamed up the giant stream until at last she came to its junction with the Negro. The Amazon is one of the muddiest of rivers, while the Negro's waters are dark, yet clear. The point of junction is marked as by a plumb line, and here are great shoals of fish, among them the huge Amazonian dolphin, the biggest fresh-water fish in the world. Manaos is a large and important city, yet if you walk a mile outside it you are lost in primeval jungle. Here McGovern engaged two men and a boy. The first man was a Venezuelan known as "The Scorpion," the other an ugly but faithful Negro called Joaquim who was to act as cook, while the boy, a cheeky, active youngster, was named Pequeneno, meaning "Little One."

Passage up the Negro was engaged on a little stern-wheel steamer called the *Inca*. The Negro is so huge that when storms rise its waves are like those of the sea and these small overloaded steamers are sometimes wrecked. But it was now the beginning of the dry season, and only a few thunderstorms were encountered. By degrees the river narrowed and grew swifter and after many days of travel the *Inca* arrived at the head of navigation, a tiny little backwoods settlement on the frontier of the pioneer country called Santa Isabel. Above this the river was too rapid and too full of cataracts for the steamer. From here the party made their first excursion into the primeval

forest and made acquaintance with many charming song birds and — less pleasant — with a tiny tick which infests the grass, crawls up the legs and burrows into the skin. There were also centipedes, each leg of which has its own separate poison sting. The doctor had a very narrow escape from one of these unpleasant creatures which he found crawling up his trouser leg.

From Santa Isabel they went on in a small launch called *Onca* or *Jaguar,* or rather they filled two barge-like boats which the little *Onca* towed behind it. Now began real hard work, battles with raging rapids in which the current was so strong that often the launch would have to drop one boat and tow the other, then come back for the first. They were now in utterly different country from the Amazon basin. It was a rugged region of low granite hills, a land far older than that through which they had already passed, and which was dry land when the whole lower Amazon basin was one great sea. Little settlements were seen here and there on the banks, inhabited by semi-civilized Indians ruled by white pioneers. These men are rubber gatherers who employ these Indians to gather rubber through the forests. This is the most wonderful rubber country in the world, the one in which rubber grows native, for no planting has ever been done here. Labour is so scarce that it would be difficult, if not impossible, to get enough to run a plantation.

The rainy season died hard, and occasionally terrific storms of rain and thunder swept the river, with lightning in blazing sheets of blue and white fire. When the sun came out after the storm, vast clouds of brilliant butterflies rose and fluttered in gorgeous clouds. Each day the rapids became worse and more dangerous. Once when the

launch was unable to force its way against the fierce current, the men sprang into the water and got a rope around a rock and hauled their little craft upward. The heat was not too great and the nights were actually cool, but insects were a terrible trial. Small stinging gnats flew in clouds, but fortunately disappeared at sunset. The forest was always beautiful, but there was little or no fruit to be found and game was very scarce. They killed an armadillo and found to their surprise that the ugly, scaly beast made an excellent dish. At last, late one evening, they came safely to the little settlement of São (pronounced *San*) Gabriel which is the very last outpost of the Brazilian Government. Beyond this was the unknown. São Gabriel is the capital of a huge department much larger than France; two thirds of it is unmapped and unknown.

The launch suffered severely in her passage through the rapids and the party had to remain at São Gabriel for some days in order to repair her. When they started afresh they found the river broken by constant successions of cataracts. The river was a mass of rocks, seething currents, and spinning whirlpools; the launch had to hug the banks and often it was necessary for some of the party to land and assist the engines with a tow line. Owing to the skill of their pilot they came through without accident, but they saw another boat wrecked on a rock island in the centre of the river, and one of the crew had a leg and several ribs broken. The people along the banks were pure-blooded Indians, but were plainly used to white men, for they brought food and gave the party shelter for the night.

The long fight with rapids and cataracts continued until they came to the mouth of the Uaupes River. His

boatmen told Doctor McGovern that if he kept along the main river he would come in a few days to the mouth of the Cassiquiare, one of the most interesting rivers in the world, for it is a sort of canal which joins the Amazon River system with that of the Orinoco far to the north. The southern tributaries of the Amazon join with those of the Plate so that it would be actually possible for a person to sail up the Orinoco in a small boat and come out many thousands of miles away in the Argentine Republic. Doctor McGovern, however, wished to explore the Uaupes because it would take him into the country of the unknown Indians. "We felt," he says, "a certain thrill as we left the Rio Negro. A few rubber gatherers visit this river but not all return; some are killed by Indians, others die by disease. A few miles up the Uaupes we came upon a rude shelter on the bank, in which lay an unfortunate man dying of some mysterious disease. He had been left behind by a party travelling upstream. A rifle had been left with him but he was too weak to use it, and his only food was coarse mandioka which he was unable to digest. We earned his intense gratitude by giving him a few tins of condensed milk. There was nothing else we could do for him."

On the following day Doctor McGovern had a very narrow escape. He had gone into the river to bathe but was seized by the strong current and swept out into the middle of the stream. He was at his last gasp when the launch reached him and was so weakened by his desperate struggle for life that he lay in a sort of stupor for the rest of the day.

A flock of toucans with ink-black plumage and absurdly large beaks flew across the river. "Look," cried one of the Indians, "we have come to the land of the Tucanos."

The Tucanos are one of the principal Indian tribes of this region. The party had now left the region where the Indians were content to live in small huts, and above the trees appeared the roofs of those strange tribal dwellings called *malokas*. The first of these which Doctor McGovern explored was at a place called Taraqua, which was near the foot of the great Ipanore cataract. This settlement was entirely Indian, but there was in residence a priest named Padre Joao. The Padre insisted that the party should stay with him for a few days. On the following day he took them down to the great *maloka*. This building was ninety-five feet long, sixty-two feet broad and eighty-seven feet to the pitch of the roof, and the whole tribe lived within it. Along each of the two sides of the great house were rows of fires, one for each married couple. The chief was quite friendly and showed them all over his strange dwelling.

Since the launch could not possibly force its way up the cataract, it was necessary to obtain boats. Padre Joao had a *montara* — a native canoe with planks nailed on to heighten the sides. This Doctor McGovern bought from him, but it was only big enough to hold half the cargo and the question was where to get another. The chief had some small canoes but these were so cranky as to be dangerous to handle. While they were puzzling over the problem there suddenly appeared another *montara* in charge of Don Manuel de Silva, a *balatero,* or rubber gatherer. Since his boat was nearly empty, he agreed to go with them to a place called Yawarete, ten days' journey up the river, and take the rest of their cargo.

Next day they arrived at Ipanore, where there was a large Indian village of three *malokas*. These Indians were affected with influenza and, though Doctor McGovern is

not a Doctor of Medicine but of Philosophy, he had a medicine chest, and with doses of salts and castor oil performed some miraculous cures which at once made him popular with these wild people. On the following morning they tackled the cataract. All the cargo had to be portaged up the banks, while the empty boats were hauled by main force upstream. Señor Manuel proved to be a first-rate fellow. Unlike most rubber gatherers he had learned the wisdom of treating the Indians well, and he handled them excellently. For many days after passing Ipanore the river was still and easy of travel. The party got into a regular routine. Starting at daybreak after an early cup of tea, they paddled until midday, or until they came to a settlement, stopped and talked with the people for an hour or so, then pushed on again until they arrived at another settlement, where they would spend the night.

They found the wild savages wonderfully hospitable, even to the hated foreigner. These wild Indians were splendidly built. Their clothes were of the simplest. For the men a loin cloth, for the women a short skirt. They came to the country of the Kolea or Woodpecker Indians, whose skins were painted in designs of dark blue. The language was extremely difficult yet Doctor McGovern managed to learn enough of it to make himself understood. Life with these Indians was not an easy matter. There is no abundance of food in their forests. They grew no rice or wheat, or barley, oats, beans, or vegetables. Each Indian village had its plantation, in which the principal crop was mandioka. Mandioka in its natural state contains cyanic acid, a most deadly poison, and requires a long process of straining, squeezing, and baking before it is fit to eat. From its flour, or farinha, are made pancakes, a coarse,

tasteless food which the Indian dips into a boiled solution of jungle pepper before eating. Doctor McGovern and his party made them palatable by spreading jam upon them.

Nearly all these Indian tribes keep chickens, yet do not dream of eating them. They are skinny little birds, but the party were glad to be able to purchase them. Yawarete, which means the place of the jaguar, is a large Indian settlement lying near the mouth of the Papory, the river which Doctor McGovern intended to explore. The chief, Nicolao, was no great lover of white men and as a rule turned them back from his territory. Doctor McGovern, however, was able to cure him of an attack of rheumatism and he became quite friendly.

In the middle of his *maloka* hung a great signal drum made of a huge log carefully hollowed out. This was beaten only at night, on the sides, with clubs whose ends were covered with rubber. Although it was beaten within the *maloka* its booming note did not sound very loud, but its carrying qualities must have been marvellous, since answers could be heard from *malokas* many miles away. On the occasion of Doctor McGovern's visit Nicolao used it to invite the neighbours to a *dubuquiri,* or feast, and shortly after sunrise canoes full of visitors began to appear. As one of these canoes neared the shore a boy jumped into the water and Doctor McGovern heard him shriek and saw him suddenly become stiff and motionless. He was pulled out and one of the Indians quickly shot an arrow into the water and dragged out a long snaky fish. It was one of the electric eels peculiar to this part of the world, and its electricity is sufficient to kill a child. The boy fortunately did not die, but he was very badly shaken.

The feast was followed by a dance, the music for which was provided by Panpipes made of bamboo tubes. The dancing went on all night but since Doctor McGovern did not take part in it he amused himself by playing games with the children. One of them christened him *"Papu"* (Daddy), a nickname which stuck to him during the rest of his wanderings.

Next day a messenger came from up river with news that the Indians had risen and killed a party of Colombians who had forced their way into their territory. This did not frighten Doctor McGovern, but terrified his servants and those of Señor Manuel. In the end it was decided that Manuel and his one faithful servant, Miguel, should join the British party, while the rest of his men returned downstream. Nicolao provided paddlers and the journey began again.

It was not long before a real adventure befell the party. A huge anaconda was seen coiled upon a tree above the water. Since shouting did not move the reptile, Doctor McGovern was driven to fire at it. The great snake dropped into the water and though badly injured drove furiously at the boat. The bump sent them back a considerable distance. Before the creature could attack again a second shot killed it.

More cataracts were met with, one more than twenty feet high, around which the boats had to be carried. All up the Papory, Indian *malokas* lay only three or four hours journey apart. In spite of the rumours of trouble, the doctor's party found the natives not unfriendly. At the junction of the Papory with its first tributary they found a large Indian settlement where the principal chief of the country happened to be on a visit. Through this chief

Doctor McGovern heard of the mysterious people called Maku or Pogsa. These Pogsas, it was said, had no settled abode but wandered through the forests, living on wild fruits and roots. They had no canoes and the other Indians looked upon them as scarcely human.

The doctor was interested to see that the Indians kept pets, among them two macaws with scarlet and gold plumage. These flew all over the *maloka* and even out into the surrounding forests, yet invariably came back to be fed.

Pushing on, the party came to the Waikano territory and arrived at a huge *maloka* wonderfully decorated with geometrical designs. The chief of this *maloka,* Kandi, was a most impressive person, overlord of all the surrounding country. He was on the point of setting out on a tour through his territory and suggested that Doctor McGovern should go with him. The doctor's medicine chest proved most valuable and Kandi gained much prestige from its use. Kandi promised to show Doctor McGovern the Pogsa people but the journey to find them proved most difficult. The first part was up a small, swift stream in a tiny dug-out Indian canoe. Each canoe is made of a single hollowed-out log and as it has no keel the slightest movement upsets it. At last the stream became so small and swift that even the little canoe could not get through and the travellers had to land and walk. The chief impressed it on Doctor McGovern that the journey must be made in absolute silence. In spite of snakes, insects, and thorns it was necessary to travel barefoot. They crossed deep gorges on single logs, and after hours of journeying came to a tiny clearing in the forest in which was a rough hut. The Indians surrounded the clearing so that the inhabitants

could not escape without being noticed, then the chief and Doctor McGovern approached the hut. A terrible wailing went up, for the Pogsas expected nothing less than death or capture, but the doctor managed to convince them of his friendly intentions and they settled down.

These people were small and as a rule very ugly. They had huge protruding jaws and retreating foreheads. Their hair was long and unkempt. Neither men nor women wore a stitch of clothing; they had no baskets, hammocks, or pottery; they had no ornaments; they had no dances or other festivities; almost the only thing which separated them from the beasts was their knowledge of fire. Their language was extraordinary, much of it metallic clicks impossible to reproduce. Doctor McGovern believes that these savages are the remains of the original inhabitants of South America; the higher tribes are probably of Asiatic origin. In one way only are the Pogsas superior to the other Indians, that is in the use of the blowpipe. The secret of the poison with which they tip their tiny arrows is unknown to the rest of the Indians.

It gives an astonishing idea of the hold which Doctor McGovern obtained over the Indians that he was permitted not only to witness the Jurupai rites, but actually to be initiated. This festival is in honour of the mysterious spirits of the jungle who have produced the fruits and flowers of the forests. No woman is permitted to witness any part of the ceremony, and when the sacred trumpets are blown all women and children rush away into the forest. A few men accompany them so as to make sure that they do not return. The *maloka* is cleared of all except those already initiated and the candidates, who have undergone long preparation and fasting. Seven pairs of trumpets

made from bark are used. Each gives out one note only, but sounded all together they produce a strange harmony which, Doctor McGovern says, seems to strike some hidden chord of emotion. Doctor McGovern was allowed to take away a set of these trumpets, but only on condition that no woman ever saw them.

The Initiates had been dosed with a curious native drug called Kaapi which produces a kind of ecstasy. Doctor McGovern found it intensely bitter, but it had no great effect on him personally. The ceremony began with a march round and round the Initiates, the trumpets blowing and rattles shaking, then the youths were beaten with a long plaited whip until blood flowed freely. Doctor McGovern watched this part of the ceremony with some foreboding, but found that he and his two white companions were exempted from the ordeal. It was strange to see one old Indian who had been suffering with rheumatic fever and could scarcely move, dancing, stamping, and rattling as wildly as any of the rest. When the rites were at an end the trumpets were solemnly taken back to the river and hidden in a hiding place beneath the water, then the doors were thrown open and the women allowed to return. After this there was a great dance, in which the Doctor and his companions joined. While these dances had a peculiar rhythm there was nothing of the jazz about them — nothing of the type of dancing seen in Liberia by Lady Dorothy Mills as described elsewhere in our book. Some, indeed, were most formal and courtly affairs, with something of the ceremonial of the old English minuet.

"These people," says Doctor McGovern, "are actually the most moral in the world. Crime within a tribe is unknown and corporal punishment is equally rare. The only

stealing that goes on is that of *wives*. Although there may be as many as five thousand women in one tribe, it is utterly unknown for a man to marry a woman from his own tribe. It is, in fact, illegal. When a man wants a wife he goes to a neighbouring tribe and, after choosing a girl, *steals* her. But very often the stealing is more of a formality than anything else."

When the time came to leave Kandi's village, Kandi himself made to Doctor McGovern a proposal which nearly took his breath away. It seems that he had heard how the chief Nicolao had been given the title of "Colonel" by the Brazilian Government. He wanted the same, and suggested that, if the doctor would suggest this to the Governor of the Amazonas, he and his sons would accompany the white men in their long wanderings. Let us say here that when, long after, they again reached Manaos in safety, Kandi was presented with the patent of nobility for which he was so anxious, while the doctor took him and his sons to a big store and provided them with enough fishhooks, knives, clothes, etc., to last the rest of their lives.

One of the chief needs of the Indians is salt. Lack of salt causes some of the children to eat earth, and the only substitute is a kind of weed which grows in the rivers and is slightly saline. Doctor McGovern's party began to run short of salt and also of food. If it had not been for Kandi's skill in shooting fish, it would have been difficult to provide for the whole party, numbering in all fourteen. Guns were very little use, for the jungle was so thick that it was seldom possible to see more than twenty yards. The Indians with their blowpipes killed more game than the white men. Monkeys were about the best food to be had,

and the white men came to find that the sauba, or leaf-cutting ant, made a very good dish. The Indians eat them raw, but the doctor and his friends preferred to roast them and found that, so cooked, they tasted very like fried bacon.

Cannibalism is not unknown among the Indians, yet is very rare. A Colombian rubber prospector had been killed and eaten just before the arrival of McGovern's party, but it seemed that he had deserved his fate by interfering with the wives of the Indians. The Indian idea is that by eating the flesh of an enemy they imbibe his strength and courage. They have the curious habit of digging up the bones of their chiefs after fifteen or twenty years, reducing these bones to powder, and adding this powder to their kashiri, the native beer.

The chief danger to the travellers was insects. One of the Indians was bitten on the foot by a spider when his whole leg swelled up and only prompt measures saved his life.

Doctor McGovern had taken a great store of trade goods with him, but some of these did not "go." The Indians, for instance, had no use for mouth organs, and they preferred blue beads to red or green. So Männling and the doctor tried a little ruse. They wore necklaces of red and green beads and made their men wear blue and white. The Indians of course noticed this and became quite keen on the red and green beads.

Every tribe has its medicine man. On one occasion when the doctor fell ill with toothache and neuralgia, one of these witch doctors offered to cure him. He drew his hands lightly over his patient's face and body and went through motions as though shaking poison from the tips

of his fingers. The interesting point is that, after this treatment, the neuralgia and toothache quite passed away.

A band of Colombian outlaws had worked through from the west into this forest and shot several Indians, with the result that when the McGovern party got into the territory where these outrages had been committed they were attacked with flights of arrows. On the second occasion they were forced to shoot back, and afterward to turn back from the tributary they were ascending to the main river.

The expedition was not to end without tragedy. Driving homeward down tremendous rapids De Silva's boat was struck by a wave and began to fill. His companion, Kandi's son, leaped overboard, but De Silva endeavoured to save the boxes containing the doctor's specimens. Too late he thought of himself. He was swung into a whirlpool into which he was sucked. He raised one hand, gave a shout of farewell, and disappeared. Three days were spent in a vain search for his body, then slowly and sadly the party continued on their journey downstream. "A true knight errant of the jungle" is the Doctor's description of this faithful friend.

There were many other adventures before the party reached Manaos, but there is no space for them here. Those whom this brief chapter has interested will find the full story in Doctor McGovern's book "Jungle Paths and Inca Ruins." [1]

[1] Hutchinson and Company, Ltd., London. The Century Company, New York.

CHAPTER XI

AMONG THE LEOPARD MEN OF NIGERIA

Lady Dorothy Mills on a Lonely Trail

"THE white creature who laughs" — that is what the black women of the depths of the West African forest called Lady Dorothy Mills, and it is by no means a bad description. It must be her laugh combined with her pluck that has enabled her to travel alone in places where no white woman has been before. It certainly is not her physical strength, for she is slim as a boy and weighs only just about one hundred pounds.

She loves travelling. She began her travels when, at the age of three and a half, her father, the Earl of Orford, took her to Florida on a tarpon-fishing expedition. She has been travelling almost ever since, mostly in Africa but also in Asia, in Haiti, and in countless other sections. There is probably no other woman of her age who has covered so many miles in wild and little known parts of the world.

Always she goes alone, and she has that curious, almost uncanny knack of handling savage and uncivilized men which is the hallmark of the true explorer, and which has brought her through in safety out of all kinds of tight places. And she can always laugh, even at herself.

Once while on the road to Timbuctu, she was taking a stroll through the bush, a mile or so from the small village where she was to spend the night, a black man appeared as if from nowhere and started to walk near her. He was

a huge creature, enormously tall and very ugly, but what disturbed Lady Dorothy most was the fact that his teeth were filed to long sharp points, which is the mark of the cannibal.

She spoke to him in Arabic and in Bambara, but he remained mute. When she beckoned him to walk beside her, he would not do so but kept on at a little distance behind. She was able to see that he wore a great knife at his waist. This behaviour was very trying to Lady Dorothy, but she walked steadily onward. The bush path seemed to lead nowhere and the heat was frightful; while every time she glanced round, there was the huge savage with his pointed teeth and staring eyes. She quickened her pace, but the man began to run. Suddenly he came out of the bush at her side.

"I hoped," she says, "that his knife was sharp and that he would get it over quickly." Then she turned to meet him.

The man halted and put out his right hand, holding a great bunch of red berries. With a broad grin he thrust them into her nerveless hand and, still grinning, disappeared. Lady Dorothy dropped helplessly by the side of the path, sat in the dust and laughed till the tears ran down her cheeks.

Since it is out of the question even to outline all Lady Dorothy's adventures, this chapter will be devoted to the story of her journey into Liberia. If you look up Liberia in the Encyclopædia, you will find it described as "a Negro republic on the Guinea coast of Africa extending North and East to Cape Palmas." It was founded by the American Colonizing Society more than a hundred years ago, and a small body of freed African slaves were settled there. These have gradually increased their territory till

LADY DOROTHY MILLS SETTING OUT ON TREK IN THE SAHARA DESERT

now they own a country five hundred miles long and about two hundred deep. "Love of Liberty brought us here," is the Liberian motto, and Monrovia is the capital.

For many years Liberia remained passive, but now, so Lady Dorothy declares, it is steadily advancing and has subdued the hostile tribes of the East and brought them under the sway of the Republic. Yet even so, the inner part of the country is very little known. Much of it has never been seen by white people, let alone surveyed, so that in some of the up-country villages Lady Dorothy was surrounded by inquisitive crowds gazing for the first time in their lives at a white skin.

When she arrived at Monrovia, Lady Dorothy found every one against her proposed journey into the interior, because of danger from the "Devil Bush", a kind of secret society which is particularly active during the spring. The society, it appeared, was not exceptionally hostile to strangers, but should a stranger lay eyes, even by accident, on one of its sanctuaries or ceremonies, the result was instant and painful death. Europeans earnestly besought her to delay her walk until the "devils" had ceased theirs.

Lady Dorothy had no fear of the devils; what actually delayed her was the difficulty in securing carriers. A traveller into the Liberian bush must take all his own stores and also a large quantity of money for paying "boys." Since gold is unknown and paper money not recognized, this cash has to be all in silver, and Lady Dorothy had actually to carry forty pounds weight of silver with her.

She wanted a head man and after much difficulty succeeded in obtaining a black gentleman named Teacup. He looked, she says, like a gargoyle, being soot-black,

short, and built like an anthropoid ape. He had a huge pendulous lower lip, six fingers on each hand, and six toes on each foot, while his eyes were hidden by large blue glasses. Yet if not beautiful, Teacup proved to be most useful.

Carriers were collected and a sort of hammock-chair was procured in which our traveller was carried, and presently she was moving up through the bush into the Pessi country. An odd trait of these people is that they smear their black faces and bodies with white chalk. Asked why this was done, Teacup answered, "It all same as face powder."

Travelling became very difficult, for the trail lay across countless small creeks. Once when a thin log was the only bridge across a rapid river, Lady Dorothy, who cannot abide heights, was forced to straddle it and struggle across while her carriers sat on the bank and roared with laughter. She had supposed that chickens and eggs could be bought at the villages but found food very scarce. And the chickens, even when obtainable, were no bigger than pigeons. Often she was very hungry, yet her boys grew fat on their rations of boiled rice. These boys could walk twenty miles a day under a burning sun, carrying a load of fifty or sixty pounds, their sole sustenance being two pennyworth of rice. They could sleep in a marsh, eat rotten fish, and drink green, slimy water. As for Lady Dorothy, she was grateful that bananas were plentiful and satisfying. In the villages each evening there would be dancing to the beating of little drums — sheer ragtime, perfect in its beat. Every night and nearly all night the drums went on.

Through the thick jungle the path cut like a tunnel, and

the hot air was sweet with strange scents and full of gaudy butterflies. But everywhere lurked dangers — snakes, from great pythons down to little poisonous vipers, and many stinging and biting insects. Of the last the most dangerous were the driver ants. These creatures have their own paths through the forest and stop for nothing. They will cut their way through a pair of boots, even a thick leather portmanteau, if it lies in their way. And their bite is as fire. Lady Dorothy tells a story of a missionary lady who inadvertently sat down on some driver ants. In a few moments she was stripped to the skin, screaming to her companions to pick off the ants that were devouring her. Nothing can stop them. If they enter a hut the inhabitants fly for their lives. But when they have gone, the hut is clean. Rats, crickets, cockroaches, even snakes — all have been eaten up.

The bush was full of wild animals, monkeys of many sorts, panthers, wild cats, squirrels, porcupines, wild boar, foxes, hyenas, and buck in immense variety. To the west the forest grew taller, and larger elephants abounded, and that interesting creature, the pigmy hippopotamus, came in view. Lizards, chameleons, tortoises, toads and frogs of different kinds were plentiful.

Most tropical jungle is so thick that travellers see little or nothing of flowers, but in this more open country the flowers were wonderful: orchids of many sorts, some of which would have brought big sums in England or America, passion flowers, bushes of scarlet hibiscus, many varieties of flowers to which Lady Dorothy could not give a name, and — in the creeks — lovely white water lilies.

The mosquitoes, sand flies, fleas, and the great heat made life a misery. The atmosphere of Liberia is like that

of an orchid house, never, perhaps, intensely hot but on the other hand never cool, while the air reeks with moisture. A pair of stockings hung to dry at night are wetter than ever in the morning, and all leather articles become covered with green mould. At night in the huts bats flew round and cockroaches raced over the floor, but Lady Dorothy minded all these much less than the rats. One night she awoke to find a huge rat on her pillow. In spite of the heat she was driven to sleep in her Jaeger bag, so as to keep their cold bare feet off her skin.

Her fear of rats puzzled one of her men.

"What matter for rat?" he asked her. "You no be feared big snake. Leopard man you laugh. You flack um big nigger like man. Why you be feared rat?"

At Suakoka Lady Dorothy met a queen, a woman who by sheer force of character had made herself chief of all the surrounding country. Though now old and infirm, she was still a power and greatly feared and respected. In return for some tobacco she presented Lady Dorothy with a chicken, the first plump chicken she had seen in Liberia. "It made my mouth water to look at it," says Lady Dorothy, and then, when morning came, she found her chicken had disappeared. "Stolen," Teacup said. But just before leaving the village they found it pecking away in the hut where it had been taken. The traveller had a good supper that night.

Here and there, on the outskirts of the villages, high palisades of palm leaves were passed, marking the boundary of the sacred precincts of the Devil Bush, the society of which so much had been told her at Monrovia. These *gri-gri* bushes, as they are called, are initiatory schools for boys and girls on the verge of maturity, and they are found

in one form or another all over Africa. Although some travellers have declared that these schools are evil, well-educated black men assured Lady Dorothy that they are an influence for good. Girls are taught the duties of womanhood and housewifery; boys, politics and the manly arts. Yet little is known by white people, for the mystery that surrounds them is complete. It is so complete that, if the "devil" or teacher appears on a path, any natives on that path fly to hide in the bush, for it is death to set eyes on him.

It is said that these societies and our civilized Masonry have the same remote origin. There is a story that a white man, a Mason, accidentally stumbled upon a sanctuary when the Devil Bush rites were being performed. When immediate death threatened him he made Masonic signs which at once gained the attention of the principal performers. In the end, so it is said, he was made a member of the "Bush." The education of the youth in these strange places ranges from a few months up to four years, according to the custom of the different tribes.

Lady Dorothy was once strolling outside a town called Naarma when she heard a "strange wailing, rattling voice that seemed to talk or chant to itself." The sound came from behind an impenetrable palisade of palm leaves.

"The devil is talking," whispered Teacup.

The society had been in session for eighteen months and would continue for another two and a half years, and until the termination of that period no one might see the face either of the teacher or his acolytes. Sometimes on dark nights there would be a strange cry in the village which sent every one scuttling into their huts. It was the devil man demanding food, and one of his subordinates,

his face masked, would then go round the huts to collect the offerings.

On the northern border of Liberia live the Mandingoes, a fine race, black of skin but tall, well-built and with excellent manners. They are great traders. At present all Mandingoes are Mahommedans, but it is believed that they are descended in part from a Semitic race, and have become black through admixture with the dark blood of Central Africa.

Beyond Naarma Lady Dorothy came to comparatively open country. Here were hills and sometimes actually a view. It was refreshing after a fortnight spent in thick forest. This was the country of the Manos, a primitive folk but big and powerfully built. Their clothes were sketchy, their hats extraordinary and of a great diversity: ancient Panamas, bowlers green with age, top hats from which the nap had long vanished, sun helmets of which nothing was left except the brims. One chief, whose only other garment was a loin cloth, wore a woman's *cloche* of black velour.

At Sanoquelleh, the largest town in Northeastern Liberia, Lady Dorothy hoped to find some butcher's meat. She was tired of tinned food and stringy chicken. Teacup shook his head.

"These people don't eat beef," he said. "They eat man." He clung to this and said he had even witnessed this cannibalism four years earlier, and declared that it still obtained when opportunity offered. He explained that there was still a Leopard Society in spite of the efforts of the Government to suppress it.

Cannibalism was fairly common in some parts of West Africa up to the beginning of the present century. The

victims were usually prisoners taken in war, or unwary travellers. Human flesh was even offered in the markets. This practice is not yet extinct, for the very secret Society of the Human Leopards has not yet been exterminated, and all its members are cannibals. The men wear claws on their hands and leopard skins on their backs and imitate the cry of the leopard. At night and in thick bush it is difficult to tell whether they are beast or human. Both men and women belong to this dreadful society, the membership of which is kept utterly secret. A Leopard leads the life of a peaceful townsman and it is only when summoned by the head of his branch of the society that he slips out by night, and the party prowl along the bush paths in search of a victim. It is said that members will actually offer up one of their own family — a wife, child, or brother — as a sacrifice. Now and then the band will make a raid on a village, but this is too risky to be at all usual. The most ghastly part of the whole dreadful business is that they will dig up and eat the bodies of those buried.

One cannibal told Lady Dorothy that a woman's flesh was preferred to that of a man. Whereupon she asked him if she herself would be good eating. He shook his head and told her that the flesh of a white person or of a civilized black man did not taste good, on account of the quantity of salt which they ate with their food. It is a curious point that these tribes who were formerly cannibals have no taste at all for beef or venison.

The Leopards are believed to possess magical powers. The story is that, when a victim has been selected, one of the society goes to a spot outside the doomed man's hut and blows "medicine" from a pipe. The victim wakes and is at once seized with an irresistible desire to go outside.

No persuasion will stop him, and he walks straight away into the darkness to his terrible doom.

When a man is arrested, suspected of being a Leopard, it is always difficult to collect evidence against him, and the native method is to use "trial by ordeal." The ordeal is by poison brewed from the sass wood. The suspect is forced to drink a bowl of this ghastly mixture. If he is guilty he dies in agony; if innocent, he is merely very sick and then recovers. Another method is to use a "smeller out", a person who is supposed to possess clairvoyant powers. He will sniff the air and point to a man. "He is a Leopard, and so is that one — and that." The odd point, as Lady Dorothy remarks, is that usually he is right.

Funny things happen in the Dark Continent. One morning about eleven o'clock, a day of brilliant, blazing sunshine, Lady Dorothy on march was badly startled by a rattling roar of thunder. She looked up but there was not a cloud in the sky and the sun glared brassy out of a burnt-up blue. Again came the crashing roar, and yet again. Her boys took it quite as a matter of course. They told her that there was a big medicine man in the village over there — pointing as they spoke — who was making the thunder. At Sanoquelleh Lady Dorothy spoke to the Commissioner about the incident. "I have no explanation to offer," he said, "but I have seen it done, myself. A medicine man taunted by some townsfolk offered to perform a miracle, and though there was not a cloud in the sky thunder roared incessantly for some minutes." All over Africa you will find medicine men and wizards, some of them no doubt humbugs, but others who understand secrets of nature which so far are hidden from the white man.

Black folk love medicine. The moment her boys dis-

covered that Lady Dorothy carried a stock for her own use they developed all sorts of ailments. Castor oil they drank with absolute relish, and Epsom salts they took as if it was lemonade. Pills they did not enjoy but anything highly coloured and evil-tasting they accepted with delight. The Negro, says Lady Dorothy, is usually capable of doctoring himself. He knows herbs that are useful in various complaints and understands bleeding, fomentations, and the use of emetics. But if affected by serious diseases such as smallpox, lockjaw, or pneumonia, his only hope is to call in the medicine man. And that is a pretty slim hope.

The medicine man has, however, a wide knowledge of poisons. He can poison food or water in ways unknown to the white; he can even poison an object in such terrible fashion that, if you touch it, death is the almost immediate result. One of his curious methods is to dip an arrow in a brew of his own making, and creeping with it by night to the village where his enemy lives, shoot it at random high in the air, at the same time repeating three times over the name of his victim. Within a few days, so it is said, the victim will fall ill and die.

All Negroes believe in spirits, some of them friendly, some hostile to man, and, as Lady Dorothy says, these spirits are sometimes a nuisance. On one occasion, when very short of food, she was camping on the edge of the Nuon River. There were plenty of fish in the water but the only way of catching them was to use a dynamite cartridge. When this was suggested the natives were up in arms at once. The river, it seems, fairly swarmed with spirits and the whole village would be in an uproar if they were disturbed in such a fashion.

The beauty of this inland country was wonderful, but the heat appalling. Always, says Lady Dorothy, one's clothes and even one's hair were soaked in perspiration. At a place called Wyan she was affected by sunstroke. Suddenly, as she was going to bed, she was seized with giddiness and a blinding headache. She was able to fall upon her cot where she lay for half an hour with the perspiration literally pouring off her, before she gained strength to take some aspirin. Liberia is no country for white folk, for it saps from them all their vitality.

At Tappi, Lady Dorothy saw a compound in which were lodged about a dozen Leopard prisoners recently caught. They were chained together. Among them were two women, one old, the other young and almost pretty. Lady Dorothy took a photograph of them, whereupon one of the men grinned and demanded a shilling to buy tobacco. Lady Dorothy turned doubtfully to a half-educated native who stood beside her. "Shall I?" she asked.

"Why not?" was the answer. "He plenty savage. He know nuthin'."

As a rule, the carriers engaged by Lady Dorothy behaved well enough, but she had one ugly experience when, on her way to Bharzon, her men mutinied, and one of them, yelling vicious threats, flung down his end of the hammock so forcibly that the passenger was nearly brained by the pole. "Scarcely yet recovered from the fever, my nerves were not under too good control," says Lady Dorothy, "and I am ashamed to say I completely lost my temper and went for him with my sun umbrella. I broke three sticks and cracked the handle, but the result was excellent, for the man picked up the hammock and gave me no trouble for the rest of the day."

But there were other troubles, for presently a most appalling thunderstorm broke. The lightning was such that the very air seemed afire and the thunder was one continuous crash. A tree struck close beside the path blew up with a crackling roar. The rain was incessant. It poured through the roof of the hammock and through Lady Dorothy's umbrella and waterproof so that she was soaked to the skin. The creeks rose like magic, and at each one she was obliged to get out and wade. It was an intense relief to reach Bharzon, where quarters for the traveller had been made ready in the barracks of the Liberian Frontier Force.

After that, there were storms almost every day and so heavy that sometimes it would turn quite dark at three in the afternoon. Often the night was spent in some foul, leaky hut where earth was piled up to screen the cot from the water leaking through the roof. The greatest trial, from our traveller's point of view, was constant lack of food. She was so hungry that she would lie awake at night thinking of the sort of meal she might order at a London restaurant, then at last sleep to wake to a breakfast of bully beef and tinned beans, warmed up from the night before, washed down by a jug of tepid, boiled water and flavoured with mud and kerosene.

She came to the country of the Chicirs, where she discovered the fate of old clothes. Never had she seen such an assortment of jumble-sale clothing as among these folk. There were faded rags at least thirty years old and worn just anyhow. Or one man would have two waistcoats and no trousers, another two hats and practically nothing else, a third a pair of garters but no socks. On one occasion a queen came to see her. She was dressed in a pair of khaki trousers and a thick black pea-jacket buttoned up to her

chin, and on her woolly head she wore a Homburg hat.

The worst day of the whole journey came when crossing the High Bush on the way to the Padsbo country. At midday Lady Dorothy found that out of twelve hammock-carriers six had deserted, at which the rest had struck. A storm was brewing and the going was worse than any yet faced. The ground was deep marsh covered with sword grass which slashed hands and face like knives, and with a horrible thorny scrub. Every few steps they were compelled to stop and cut a way.

Lady Dorothy induced the men to start again, but they were in a bad mood and dropped the hammock. The fall sprained one of her ankles badly. By dint of threats, bribery, and an occasional thrashing, she kept them going until a quarter to six, when they insisted on stopping. Lady Dorothy could do nothing, for her pocket Browning was in a load which had been left far behind. There was no moon, no light, no quinine, no tent. All these were in the loads also. And the storm was almost due to break. Her own boys built a rough shelter covered with palm branches, made a fire, and Lady Dorothy drank a cup of muddy Bovril made in a cigarette tin and went to bed in her hammock. Mosquitoes, horseflies, flying ants and beetles swarmed and bit, while the storm raged on. The rain fell in a steady terrible torrent, hour after hour, and Lady Dorothy, soaked with the water which came in on all sides, lay and listened, in too great pain to sleep.

Next day, wading through rivers of mud and water, the exhausted party reached a wretched little village where they found shelter of a sort until carriers could be obtained. Worn out in mind and body, Lady Dorothy at last reached

Nyaake. "How good it was," she says, "to be comfortable again, to be free from smells and vermin and wet, to feel replete and well rested and to talk in a civilized language to a person with the same brand of mind as one's own." Nyaake is on the bank of the Cavally River, and the rest of the journey to the coast was made in the comparative comfort of a big dugout canoe.

The full account of Lady Dorothy Mills' adventures in Liberia can be read in her book, "Through Liberia." [1] The authors wish to acknowledge her kindness and that of her publishers in permitting them to use material from this interesting volume.

[1] Gerald Duckworth Ltd., London; Frederick A. Stokes Co., New York.

CHAPTER XII

FIGHTING DISEASE IN THE JUNGLE

Albert Schweitzer's Work of Healing in Darkest Africa

TO many readers the name of Albert Schweitzer may be unknown, yet not long ago a British bishop declared that if he were asked to name the three most remarkable men living to-day, Albert Schweitzer would be one of them.

It was in 1913 that Doctor Schweitzer went out to the jungles of Equatorial Africa, accompanied by his wife as nurse, to found a mission hospital, and, with modern medicine and healing methods as a weapon, to attack the terrible diseases which decimate the natives in that part of the world. This modern Livingstone performed his first operations at Lambarene, on the Ogowe River, in a disused henhouse!

For four years, until 1917, he fought sleeping sickness, dysentery, fever, and all the terrible diseases which are found in the tropics. Then, as an Alsatian (and therefore, nominally, a German) he was interned by the French, who control the region in which he was working, and it was not until 1924 that he was able to return to his work as the lone white doctor in the African jungle.

While he was absent, his hospital had been eaten by white ants, and his first task was to build, with native labour, another and larger hospital. There was a famine in Lambarene that year, and the doctor had to fight the famine while he toiled at building a new hospital. It was a

terrible struggle. But he won, and to-day a modern hospital with accommodation for a hundred patients — when an epidemic breaks out it often shelters as many as a hundred and forty — is being conducted in a region where, until the coming of Doctor Schweitzer, a skilled doctor was unknown.

This wonderful work becomes more wonderful still when it is realised that from the day when he first landed in Africa Albert Schweitzer has himself raised every penny needed to carry on his work. In the first year he established a hospital on a total outlay of six hundred pounds. Since then he has continued to toil amid the steaming jungles, under the blazing tropical sun, on funds collected from friends in England, Germany, and France, eked out by very occasional visits back to Europe, when he lectures on his mission and so increases the interest which is being taken in his work. But these visits are rare, for, like all pioneers, Doctor Schweitzer is happiest when he is actually on duty. The climate of Lambarene imposes a terrible strain upon a white man after a few months. Officials in the region usually come home on leave every eighteen months. Doctor Schweitzer has worked there for three years at a stretch — longer than any white man before. And during those three years he has worked from dawn until sunset and after, fighting death and curing pain.

This man would deny that he is a hero, or an adventurer. Yet, if renouncing a comfortable life in a civilised world to face every conceivable peril of death and disease on the edge of primeval forests is a heroic act of self-sacrifice, then Albert Schweitzer's name will be included in the roll of heroes of our generation.

Perhaps the most amazing thing about Albert Schweitzer is the fact that until he was thirty years of age, he had no intention of taking up medicine at all! He was already famed as a Doctor of Theology and a Doctor of Music; had written a book on Bach which is a classic, and was one of the finest organists in Europe. He had already accomplished more than most of us achieve in a lifetime. A brilliant career lay before him. But he was not satisfied. He felt that a life of comfort in Europe was not enough. He made enquiries and was told that in many parts of the world people were dying from terrible diseases which might be stamped out if only doctors and medicines were available. Yet Europe did not seem to care. The thought oppressed the brilliant musician and theologian. These natives, helpless in the face of disease and pain, were God's children. What was the use of our boasted civilisation if it did not help them? Surely saving lives, carrying healing and the Word of God to the primitive inhabitants of African Jungles was of more importance than playing the organ in wonderful cathedrals or writing books? Better still, he could work in Africa and still have time to write books — with perhaps an occasional visit to Europe, when his musical genius could be used to provide the funds for his medical mission.

And so was born Albert Schweitzer's great decision to become a doctor in order to succour the primitive and pitiable natives of Africa — the decision which changed his whole life and has made him the David Livingstone of to-day.

At thirty years of age he began to study, finally taking his degree at Strasbourg University. Then he entered upon a course of Tropical Medicine at Paris. This accomplished,

THE LIVINGSTONE OF TO-DAY

Dr Albert Schweitzer on the banks of the Ogowe River, French Equatorial Africa.

Photo by Miss L. M. Russell

NATIVE HOSPITAL ORDERLIES TRAINED BY DR SCHWEITZER TO ASSIST HIM IN HIS WORK IN THE TROPICAL JUNGLE OF AFRICA

he turned his back upon ease, and books, and quiet study at universities, and set out for the forest and jungle where many foul diseases, from leprosy to sleeping sickness, were carrying off the natives like flies.

For the scene of his labours Schweitzer selected Lambarene, in the Baboon country of French Equatorial Africa, where there was already a French Mission at work.

He and his wife (who had taken a nurse's training) arrived there in July 1913. In his account of the first days in Africa [1] Doctor Schweitzer relates how, despite strict orders that only the most serious cases were to be brought in during the first three weeks, the news of his arrival spread like wildfire and sick natives turned up every hour from the moment when he set foot ashore.

From the first there were difficulties which might have daunted a less resolute man. There were no means of segregating those suffering from infectious diseases, such as the dreaded sleeping sickness, then rampant in the district. There was the language difficulty, for the doctor discovered that fifteen different languages were spoken in the region — and fifteen languages are spoken in his hospital to this day. There was a shortage of drugs, instruments, and bandages, for he had only one trunkful with him. The rest had still to be transported up the river. Finally, there was no operating theatre, surgery, or any place where he could tend the patients who waited, mutely suffering, outside the mission house.

The first task was to get to the mission the seventy cases he had taken out — sixty-nine of which carried supplies of drugs and the surgical instruments. The

[1] "On the Edge of the Primeval Forest," A. and C. Black.

seventieth case, lined with zinc as a protection against the white ants, carried a piano which had been presented to the pioneer doctor by the Bach Society of Paris, in recognition of his many years of work as their organist.

The only boats available on the Ogowe River were canoes hollowed out of tree trunks. It seemed impossible that one of these frail craft could transport the heavy piano up the river, but at last a larger canoe, hollowed out of a gigantic tree, was found, and in this the first piano ever seen in that primitive part of the African jungle safely reached Lambarene.

The cases unpacked, a member of the mission staff cut and put up some shelves in Doctor Schweitzer's room, and in this primitive surgery the doctor got to work, treating and bandaging the sick in the open air.

Rains in Equatorial Africa, however, mean tropical storms, and the disadvantages of working in the open air soon made themselves felt. Doctor Schweitzer therefore looked around for some building which would shelter him and serve as a temporary hospital. How he solved the problem is told in his own words:

"Under the pressure of this discomfort I decided to promote to the rank of hospital the building which my predecessor in the house, Mr. Morel, the missionary, had used as a fowlhouse. I got some shelves fixed on the walls, installed an old camp bed, and covered the worst of the dirt with whitewash, feeling myself more than fortunate. It was, indeed, horribly close in the little windowless room, and the bad state of the roof made it necessary for me to wear my sun-helmet all day, but when a storm came on I did not have to move everything under cover. I felt proud the first time I heard the rain rattling on the roof,

and it seemed incredible that I could go quietly on with my bandaging."

For an assistant he selected a native who had been a cook and who, although intelligent, persisted in explaining all symptoms in terms of the kitchen. Thus he would declare "That man's right leg of mutton hurts him," or, "This woman has a pain in her left upper cutlet."

Despite all drawbacks, and the primitive conditions, the work of healing had now begun. Joseph, the cook, proved a valuable interpreter, and later was able to undertake simple tasks of bandaging. Mrs. Schweitzer had charge of the instruments and assisted in operations, also looking after the bandages and drugs.

"Surgery hours" on the Ogowe River began at eight thirty in the morning, at which hour the first patients would be waiting in the shade of the house. And every morning Joseph would read out in native dialect the "Doctor's Orders" drawn up by Schweitzer — orders which reveal the difficulties under which his work was done:

1. Spitting near the doctor's house is strictly forbidden.
2. Those who are waiting must not talk to each other loudly.
3. Patients and their friends must bring with them food enough for one day, as they cannot all be treated early in the day.
4. Any one who spends the night on the station without the doctor's permission will be sent away without any medicine. (It happened not infrequently that patients from a distance crowded into the schoolboy's dormitory, turned the boys out and took their places.)

5. All bottles and tins in which medicines are given must be returned.
6. In the middle of the month, when the steamer has gone up the river, none but urgent cases can be seen till the steamer has gone down again, as the doctor is then writing to Europe to get more of his valuable medicines.

Bottles and tin boxes are worth their weight in gold to a doctor working in a climate which is so damp that drugs will only keep in good condition if enclosed in corked bottles or in air-tight tins. For some time after his arrival in Africa Doctor Schweitzer was writing to all his friends for more and more tin boxes because of this.

Even when the supply of tin boxes and bottles was sufficient, the task of curing sickness was still difficult, on account of the ignorance of the natives concerning medicines of any sort. The doctor and his assistants wasted hours in trying to make their patients understand just what they had to do. They would appear to understand, go away, and then perhaps empty a bottle of medicine at one drink, eat the ointment, and rub the powders into their skin. When it is remembered that Doctor Schweitzer was from the first treating thirty or forty patients a day for such complaints as sleeping sickness, heart trouble, injuries to bones, tropical dysentery, and other serious forms of illness, the seriousness of never being able to be sure that the patient was taking his medicine correctly may be imagined.

In 1914 the first real hospital was built upon land loaned to Doctor Schweitzer for the purpose. It included a corrugated iron hospital ward, accommodating forty patients,

a consulting room, and an operating theatre. The floor was of cement, and the windows had no glass in them, but fine-wire netting to keep out the mosquitoes, and there were wooden shutters which could be closed to keep out the rains.

Here Doctor Schweitzer performed two or three operations a week. With facilities for sterilising the instruments, and more nurses, he could have been operating every day, for the natives felt no fear in submitting themselves to "the doctor who takes away pain," and they would squabble among themselves as to who should have the privilege of being operated upon first.

Many were touchingly grateful for the doctor's services. One man offered to repair the roof of the Doctor's house as repayment. Another collected a pound from members of his family and sent it as payment for an operation which had been performed upon him. Others did odd jobs that needed doing about the hospital.

For a year Doctor Schweitzer toiled in this hospital, finding the time to study leprosy and sleeping sickness, as well as the insect life of Africa.

And then came the War. The first effects of the conflict was a shortage of food at Lambarene. For many weeks both the doctor and his wife existed on monkey meat. Yet still the work of healing must go on, and when, eventually, the doctor was taken back to France and interned, the hospital built to accommodate forty patients was crowded with one hundred and sixty!

For seven years the War, illness, and lack of funds kept Doctor Schweitzer in Europe, and it was 1924 before he returned to the primitive forests. Miss Russell, an Englishwoman who later worked for a year at Doctor Schweitzer's

new hospital at Lambarene, has placed on record how he returned to his great work in the tropics.

"He had to start all over again, for his buildings were in ruins. Patients, in their delight at his return, left him no peace to unpack and rebuild, but thronged the old roofless huts, in which it wrung his heart to see them drenched with rain at night.

"Scarcely was sufficient shelter provided for the needs of the hospital as it had been up to 1917 when famine set in over hundreds of square miles of territory. He had seen it coming in time to lay in a store of many tons of rice, so he was able not only to keep the hospital going, but to save great numbers of lives besides. Without this rice he must have turned his patients away to starve. A terrible epidemic of dysentery followed the famine. The treatment available to relieve their varied sufferings became known to the natives at ever-increasing distances. The number of patients kept on growing. The old huts were totally inadequate. There was no possibility of segregation; no place for the dying or the dead."

Faced with these conditions, and knowing that his hospital was built upon borrowed land which might not be long available, Doctor Schweitzer decided to move his headquarters, and made arrangements to build a larger hospital on a new site granted to him by the Government two miles up the Ogowe River.

The new site was covered with impenetrable jungle, and the first task was to clear it. This work he undertook himself, leaving the care of his patients to two assistants. It was terrible toil under the tropical sun, but Doctor Schweitzer was not content to tell the native labourers how to do it. He did even navvy's work with his own hands.

The ground ready for building, he planned the new hospital, and during its construction acted as architect, clerk of the works, foreman, carpenter, and in any other capacity which would hurry up the day when the first patients could be moved into the new buildings.

From first to last he superintended the work himself, staying in Africa for months longer than it was thought safe for any white man to labour under the hot sun in order to make sure that everything was correctly carried out.

It was not until August 1927 that he returned to Europe, unannounced, and met his wife and daughter in Strasbourg, whither they had gone on a visit from their home close by.

The wonderful hospital, due to the labours of one man, is still carrying on its work of healing in darkest Africa. The climate in which that work must be done will always be the worst in the world for white men. But Doctor Schweitzer is labouring to make life more bearable for the doctors and nurses who are now toiling with him. A garden has been cleared and planted, providing the hospital and its staff with vegetables. Here grow also bananas, mangoes, pineapples, oranges, limes, and cocoa and coffee trees — all on soil which until two years ago had been virgin forest since the world began. Later on, the coffee and cocoa plantations may bring in money toward the expenses of the hospital.

To appreciate the real adventure of Doctor Schweitzer's work in Africa — and the real perils — one must remember that from the first minute to the last he has been fighting two of the most dreaded enemies of the tropics. The first is the sun; the other is the tsetse fly, the winged

insect which carries the germs of sleeping sickness.

The tsetse fly is active only during the daytime, and compared with it the worst mosquito is more or less harmless. It is small, about half the size of a house fly, and almost invisible in flight. Yet so deadly is this germ-distributor, that it takes a yearly toll of tens of thousands of lives, and fortunes have been spent in trying to discover a means of conquering it.

To get to human blood it will pierce the thickest clothing, and it is so artful, according to Doctor Schweitzer, that it is almost impossible to kill one with the hand, for the moment it feels any movement it flies away. The fact that it will rarely settle upon white material, on which it can be seen, afforded some protection for Doctor Schweitzer and his white assistants during their journeys through the African jungle, but the natives suffer badly, and little can be done for them.

Even if the tsetse fly is absent, there is nearly always the sun to be faced, and no sun is more terrible or deadly than the sunshine of the French Congo.

Doctor Schweitzer has told something of what it can do if one does not exercise constant care. On one occasion a white man, working in a store, was resting with a ray of sunlight, about the size of a half crown, shining on his head through a hole in the roof. A few hours later he was in high fever. Another lost his sun helmet when the canoe in which he was travelling was upset. He clambered back on to the upturned boat and at once put his wet coat and shirt over his head to protect himself from the sun. But it was too late and he suffered from bad sunstroke.

Add to this danger the stifling heat and days of damp close atmosphere without a breath of air, and with the

thermometer soaring to heights unknown in Europe, and some idea of what Doctor Schweitzer has faced will be understood.

One day, it may be, a remedy for sleeping sickness will be discovered out there in the hospital where he is still working, supported now by a devoted band of helpers. Whether it is or not, Albert Schweitzer has shown the world what a brave man, scorning a life of ease and fame, can do to help his fellow men: shown us, too, that there is work waiting for every pioneer who is prepared to give up the comforts and luxuries of life and face death and disease to carry succour to the lands where pain is still the common lot and medicine is still largely unknown.

Like Sir Wilfred Grenfell, the "doctor of Labrador",[1] Albert Schweitzer is too modest to talk about his achievements, either in philosophy, music, or medicine. "I am a poor humble doctor," he told his English friends when he visited London, but those who have visited his wonderful hospital, standing like a sentinel of healing amid the virgin forests of dark Africa, know that there is no more striking example in our generation of a man having "given up everything" to follow his ideal of service to humanity where the need is greatest.

Like Livingstone, his predecessor, he has a horror of suffering. It was the desire to save pain that caused him, while in Africa, to buy a baby chimpanzee from native hunters who had shot its mother. He wrote to friends in Europe: "I am interrupted in my writing by having to go and feed with a spoon this little three-months old creature which is in a little box, swaddled up like a baby. After sucking up its four ounces of food, it snuggles down on

[1] See "Heroes of Modern Adventure."

its cushion and goes to sleep. When it sees any of us during the day, it cries out to be taken up. It loves to be carried about in our arms."

There is a picture of the man who turned his back upon music, books, ease, security, friends, and even home, in order to bring the hope of healing, and to become a missionary, in a corner of the African continent. Few have deserved so richly, by sacrifice and service amid dangers, to be added to this record of the great adventurers of our times.

CHAPTER XIII

IN THE HEART OF THE DESERT

With W. B. Seabrook in Arabia

WHAT is it that starts a man on the trail of adventure? Mr. W. B. Seabrook says that in his case it was a picture in a book given him by his grandmother, when he was a very small boy. It showed three majestic cloaked figures riding on the backs of strange towering beasts, following a star. In other words, the Three Kings of the East bringing their gifts to the Infant Christ.

Mr. Seabrook is American. As the boy grew older, his family moved from the State of Maryland to Kansas, where they lived on the flat prairie with huge sunny and airy spaces around them and not a hill in sight. Perhaps this helped to fill the mind of young Seabrook with that love for exploration which has since made his name so well known. He read "The Arabian Nights" and "Marco Polo" and grew up with a great longing for the Mysterious East. For a time his life was like that of any other American boy of good parentage. He went to school and to college but then, instead of taking to business, the urge for adventure drove him to cross on a cattle boat to Cherbourg with the idea of tramping round the world.

He worked his way across France to the great seaport of Marseilles and there his dreams began to materialize, for on the broad quays he saw turbaned Arabs, red-fezed Turks, and Arab traders in striped robes. He

made friends with a young Turk from Smyrna who was lamp-trimmer on a Messageric boat trading down the Mediterranean, and by dint of a little bribery got himself smuggled aboard as assistant. He believed that if he could reach Smyrna, he could tramp across Asia Minor as he had across France.

Luck was against him. He was caught at Naples and kicked ashore, then he fell very ill and was forced to cable home for help. So he returned to America and went to work.

Years slipped by. Seabrook married, then came the War and another journey across the Atlantic as a member of the American Expeditionary Force. Gassed at Verdun, he was sent home, and he settled in New York to write for a living. Writing was not very successful and he and his wife opened a little coffeehouse, into which one day drifted a handsome young Druse, by name Daoud Izzedin, who talked of his people living in castles built of black lava rock on the edge of the Arabian desert, of slaves with jewelled scimitars, and veiled beauties of the harem. Seabrook's dreams of the marvellous East rose again, and armed with introductions from his new friend, he and his wife left New York in the steamer *Asia* of the Fabre line, bound for Beirut.

They landed at Constantinople and wandered down across Asia Minor, sometimes by train, sometimes by waggon, till at last they reached Beirut and the house of Izzedin where, to their delight, they found Daoud himself. A few days later Seabrook left his wife with this kindly friend and rode away into the desert, on his way to make friends with the Bedouins.

Adventure was not long in coming, for as he and his

guide rode through the wild mountains of Lebanon they were ambushed by a party of robbers, who announced that they would take everything except their clothes and their water bag. The guide received this news with true Oriental fatalism, but Seabrook had different ideas. He had already learned Arabic and he talked to the Arabs to good purpose. "I am," he said, *"dackhile"* (inviolate); "I go to my brother, Mitkhal Pasha. If you are in want, I give you all I possess, but I offer them as gifts and you must accept them as gifts. If you take them by force your forces will be blackened." He then produced a letter signed by Amir Amin Arslan, one of the greatest and most powerful of Arab chieftains.

The robbers were furious, but they dared not risk trouble with the great and powerful tribe of Beni Sakhr, so they drew aside and let the travellers pass. And in a few days Seabrook reached the ancient city of Amman, capital of Transjordania, where he presently fell in with friends of Mitkhal, who sent word to the chief of his *Farengi* (foreign) visitor. Two days later arrived a magnificent coal-black Negro with twelve mounted Bedouins. The black man was Mansour, major-domo of Mitkhal's household, and wore a gold braided *abba* (cloak), while at his waist was a jewelled scimitar that might have come straight from "The Arabian Nights." He led a beautiful little blooded white mare, a present to Seabrook from Mitkhal himself, and mounted on this Seabrook found himself riding away across the desert.

It was near evening when they left the town and as they entered the desert hills an immense moon rose above the brown dunes. Guided by its silver light they came to an encampment of fifty or sixty black camel-hair tents.

Mansour shouted and men came out and shouted back. Women, too, came out of the tents. They were slender and brown and, unlike the women of the towns, went unveiled. The travellers dismounted outside a great tent which faced away from the others toward the east, and here a stately chieftain came out and embraced Seabrook, saying in Arabic: "The brother of Amin is my brother."

Sheik Mitkhal is overlord of twelve thousand fighting men, of six villages, of a great stretch of cultivated land tilled by serfs, and of a fine palace where he never lives. He is a little over forty, an aristocrat in every sense of the word, with beautifully shaped hands and feet, fine features, brown eyes, and a small black pointed beard. Mitkhal ushered his guest into the great tent, ninety by thirty feet. Part of it, the harem, was curtained off; the rest was open to the pleasant desert breeze. They sat on soft rugs, drinking coffee and smoking. Supper was brought in — first a big wooden bowl of camel milk, which was offered to Seabrook and drained in turn by him and Mitkhal; then a gigantic dish of brass fully five feet across on which lay the roasted carcasses of two sheep. Boiled rice and gravy surrounded the dish and at the edges were folds of thin bread cakes. They ate with their right hands, and it is to be remarked that it is bad manners to lick the fingers or to put them into one's mouth. Seabrook slept on a mattress and rugs, and he tells us that in the middle of the night he woke to find Mitkhal himself bringing him another cover for fear he might be cold. A little thing like this gives one some idea of the amazing kindness and thoughtfulness of the desert folk toward their friends.

Seabrook had arrived in ordinary European clothes but, by advice of Amir Amin, had brought with him a complete

MR W. B. SEABROOK

Photo Keystone

SHEIKH MITKHAL WITH HIS FAVOURITE WHITE RACING CAMEL, MAZIR (LITTLE WHIRLWIND)

From "Adventures in Arabia," by W B Seabrook

suit of Bedouin clothes, and these he put on next morning. Mansour was greatly tickled and pretended he could not recognize the "foreigner", but the Sheik himself was pleased and presented his guest with a rifle, cartridge belt, and pistol. Then they went riding and visited the palace which was never lived in.

The courtesy with which Seabrook was treated was amazing and delightful. No questions were asked him as to his origin or religion, his occupation, or where he lived. He was a guest — and if he chose to remain with them the rest of his life he was welcome to do so. Indeed, he tells of an Austrian who came as a boy to the Beni Sakhr and remained with them until he died.

Those who have had anything to do with the ordinary camel of Egypt are aware that it is the most savage, sulky, ill-smelling, and ill-conditioned of draft animals, but the Beni Sakhr had a great herd of exquisite white camels, clean of limb, with long graceful necks and small well-formed heads. Their hair was soft and silky, their breath sweet as that of a cow. They were smooth of gait and pleasant in temper. They were comfortable to ride and amazingly swift. "Like flying with the wind," Seabrook says. Indeed, at any distance over six miles the white racing camel runs away from even the thoroughbred Arab horse. It is true, says Seabrook, that a camel can go seven days without water, but the Arabs take their camels to the wells every third or fourth day and each drinks eight to ten bucketfuls.

The Arab is the strangest mixture. He is wonderfully hospitable, a most loyal friend, and honest and honourable among his own people. Yet in spite of all that, his chief amusement in life is robbery. European travellers he looks

on as lawful prey, and any who venture out on the desert alone take a very serious risk. A German professor who set out from Damascus for Palmyra came back afoot, stark naked except for his linen duster.

The raids on other Arab tribes are conducted under regular rules. They fight, of course, but a man who has fallen from his horse must be spared, and if prisoners are taken they must be well treated and allowed to ransom themselves. On no account must a raider shoot into an encampment for fear of wounding women or children. Even when there is a death feud between Arabs, neither party may shoot the other unawares. There is no slaying from ambush.

The Arab term for a raid on the cattle of another tribe is *"ghrazzu."* One night, word came to Mitkahl's camp that another tribe, the Sirdieh, were on their way to seize the flock of priceless white camels, and at once plans were made to counter the attack. The camels were sent out to graze as usual, but four hundred men were ordered to ambush the raiders. These men came riding up, shouting joyfully. Seabrook says that the yells were exactly like those of Buffalo Bill's Redskins. He himself, with Mitkhal and Mansour and a few picked men, rode out and took a great circle to the south to get behind the raiders.

At dawn dots appeared on the sand hills, three scouts of the Sirdieh dashing up in an endeavour to capture the herdsmen and drive off the camels. Then the shooting began, and as the horse of one scout went down, the others turned and galloped off. The fallen man picked himself up and stood calmly waiting. Mitkhal's men did not even trouble to disarm him. Mitkhal merely told him to go with one of his men and the answer was: "I bide under the law,

O Sheikh." Then Mitkhal and his men rode in pursuit of the raiders.

All day long they kept at it, with but short rests. The Arabs seemed tireless, but Seabrook grew sore all over and desperately hungry and thirsty. They did not stop until the moon set, then all lay down on the desert. It was bitterly cold and Seabrook was too tired to sleep. Two hours' rest, then they were off again. They came upon treacherous grounds with gullies deep and wide enough to hide an army, and the pace slackened, and scouts were sent forward, while the rest watched their horses.

Suddenly the scouts came tearing back, pursued by a force of about thirty men. Though Mitkhal's force numbered four hundred he ordered a retreat. For a while there was sharp firing but only one or two on either side went down. Then all of a sudden the pursuit ceased and all was quiet. Seabrook was naturally astonished to see their own big force retire before a small one, but presently he discovered the reason. Mitkhal, clever as any old fox, had felt sure that thirty men would not have attacked unless there had been some trick behind it, and he was absolutely right. The Sirdieh had joined up with a big tribe, the Roualla, and had hoped to lure the Beni Sakhr into their hands.

So there was nothing for it but to go home again, which meant thirty-four hours' riding. Now that the excitement was over, Seabrook was half dead with fatigue, but luckily for him the kindly Mitkhal realized his plight and made him change his horse for a camel. He clung on, more than half asleep, passed through the bitter chill of another desert night, and finally became quite unconscious and had to be lifted off and carried into camp, where for the next three days he was content to lie and laze while the soreness

went out of his bones. Seabrook was rather ashamed of his collapse but the Arabs had only compliments.

A few days later the Amir Abdullah himself came to call on Mitkhal. He drove up in an old tin Lizzie with a guard of two Bedouins only, was most delightfully friendly and informal, and chaffed Seabrook about his adventures. But he said he hoped he would not go on *ghrazzu* again, for there might be trouble if a foreign visitor got "bumped off."

After taking leave of his Arab friends, Seabrook and his wife adventured into the Druse country. The Druses are one of the strangest races in the world. They are not Moslems, they are not Christians; they have a religion of their own which some stupid folk have described as devil-worship, but which actually is nothing of the sort. They have lived for centuries in the volcanic mountains on the edge of the Arabian desert, and though nominally under Moslem rule have always kept their independence. They are, says Seabrook, "a separate race held together by a secret religion, and by their marriage laws, which inflict swift death on any Druse woman who seeks to marry outside her own people."

They are wonderful fighters, and the boys from the age of fourteen up are warriors. If a Druse ever shows cowardice in battle there is not a word of reproach, but when next the evening circle forms for coffee, the host, in handing this man his cup, splashes a few drops on his robe. Again nothing is said, yet this is equal to a sentence of death, for in the next battle the coward must fight to the death. If he comes out alive, his whole family is disgraced. The strange thing is that these terrible fighters wear their hair long and darken their eyelids with kohl.

With their flowing robes and strange headgear they look as if they belonged to the Middle Ages, yet their rifles and ammunition are very much up to date.

Seabrook and his wife visited Souieda, the capital of the Druses, and there met the Sultan Pasha Atrash, the far-famed "Lion of the Druses." There was nothing formidable in his appearance, for he was not tall or big. His eyes were pale blue with an expression of haunting sadness. His hands were soft, his voice gentle. At home this man was "gentle as a lamb", says Seabrook, and so charitable that his family had to guard against his giving away everything he possessed. In peace time he devoted his whole life to helping the poor and praying, yet in battle he has proved himself as terrible a fighter as lives.

On a wall in his palace was a picture of his father, Thoukan Atrash, a giant of a man and famous as a warrior. Sultan Pasha told his guest: "When I was a baby one year old, the Turks came, and my father holding me in one hand and his drawn sword in the other, leaped to the back of his horse and guiding it with his knees, charged through them, slaying three as he escaped, so that the blood was spattered in my face." Thoukan Atrash was captured by treachery and hanged by the Turks in the public square in Damascus. The rope broke three times, but by the third time he was already dead.

The Seabrooks were taken on horseback to little villages far back in the mountains, villages unmarked on any map, where the peasants lived untouched by modern civilization. This country is called the Lejah and among the people are sorcerers, one of whom worked wonders for his visitors. He hung a Bible from the ceiling by a cord, then read the passage from the Koran which denies the divinity of

Christ. As he read, the Bible began to spin and jump until the cord broke and it fell on the floor. By reading other passages from the Koran, he made an egg jump out of a pot of boiling water and smash on the floor and — most wonderful of all — made water pass from a full jug to an empty one ten feet away. The people believe in ghouls and jinn (demons), and when any one dies and his body is buried, people guard the grave for five days and five nights.

The men of the Druses are divided into *akils* and *jahils*. Any man over twenty-five may become an *akil* if he is willing to take the vows, which are very strict. An *akil* may not smoke or drink spirits, and he must be very moderate in his eating. He must never lose his temper, never run, never raise his voice and never boast. He may not fight in any private quarrel but only for his country. In fact an *akil* who obeys his vows is actually something very like a saint.

The most wonderful woman among the Druses is the Sitt Nazira el Jumblatt, known as the Veiled Lady of Mukhtara, who claims descent from Saladin and lives in a most marvellous palace in the mountains in the wildest part of the Lebanon. The palace covers an acre, has marble steps, Corinthian columns, walled gardens, and fountains. The Seabrooks were ushered into an immense parlour with tiled floor, gorgeous Eastern rugs and hideous Victorian furniture. Servants brought in cooling drinks made of lime juice and orange blossoms, perfumed cigarettes, sweetmeats, and cups of coffee. Finally the lady herself appeared, tall, splendid, and beautifully dressed in black, but veiled. They kissed her hand and she sat in a rocking chair and talked. She had the most wonderful voice, a deep contralto. Presently she dropped her veil and the Sea-

brooks were able to see that she was really beautiful, with great liquid black eyes, well formed features, and flashing white teeth.

Later they were shown over the palace, under which roars a subterranean river. There was stabling for three hundred and fifty horses, and dungeons and prison cells with iron chains riveted to the walls.

Before leaving the romantic mountains of the Druse country, Seabrook was introduced to another wonderful woman, Sitt Zainat Umm Yahyah el Atrash, known as the great-grandmother of warriors. Ninety years old, she resembled a gaunt old eagle, and was surrounded by a host of fighting men, all her own descendants. Among them was Sultan Pasha Atrash, who was her great-nephew, and he and she spoke in whispers. What they said Seabrook never knew, but within a week the Druse war songs were ringing among the cliffs and gorges and the great revolt of 1925 against the French had begun.

After leaving the Druse country Seabrook visited those strange folk, the Whirling Dervishes of Tripoli. There are thirty different sects of Dervishes in Islam, all mystics. They practice chastity, poverty, penance, and self-torture. There are the Howling Dervishes, who slash their bodies with knives and burn themselves with red-hot irons; the Fire-eaters, who devour red-hot coal and bite the heads from poisonous serpents; and the milder Melervi, whom Seabrook visited and who number probably one hundred and fifty thousand. Seabrook watched the ceremony of the whirling — *zikr,* as it is called. The men balanced on the right heel and began to turn, slowly at first, then faster and faster, until they were spinning at a rate of thirty to over sixty turns to the minute. They spun like

tops and soon were evidently in a state of trance. They whirled for eleven minutes, then their Sheik stopped them. Curiously enough, they did not wobble like drunken men, but stood silent and still as statues. Then they began to whirl again and kept it up for no less than nineteen minutes, after which they sank to the floor and remained motionless.

Later, Seabrook was permitted to visit the Rufai Hall of Torture. Twenty Dervishes squatted on the stone floor of the low-roofed, murky hall where the air was thick with pungent odours and lit by smoky oil lamps. These men had long rough hair and were naked to the waist except for black cloaks thrown over their shoulders. They chanted and their voices grew louder until the sound was a mad uproar.

Suddenly one of the Dervishes leaped up, throwing off his cloak. The Rufai Sheik sprang to his feet and seized a red-hot iron spit from a brazier. The Dervish backed against a wooden pillar and stood with his mouth open, whereupon the Sheik drove the heated iron through his cheek, pinning him to the pillar. Then the other Dervishes seized red-hot implements. Seabrook saw one man licking a poker so hot that at each contact steam arose. Others pierced the flesh of their breasts with long skewers or slashed their chests and shoulders with knives so that the blood flowed.

If this sounds rather beastly, the men, it must be remembered, felt no pain because they were already in "the state" — that is, in a trance. The wounds, being made with heated irons, are antiseptic and heal rapidly, and in a month these strange mystics are ready for another of their unpleasant orgies.

Seabrook has proved to himself and others that the

Druses are anything but devil-worshippers. Yet there *are* devil-worshippers, and his next journey was made to visit these strange people, who are called the Yezidees, and who are scattered throughout little known parts of the East. Worshippers of Satan, they are hated alike by Moslems and Christians. Some live in Northern Arabia, mostly in the wild mountains north of Bagdad. The strangest stories are told of these folk. It is said that their headquarters are in a great temple hewn in solid rock in a mountain side, where they worship a huge brazen peacock with bloody and mysterious rites. It has also been said that they possess seven great towers, power houses of evil, which stretch across the whole continent of Asia from Kurdistan to Manchuria.

It was no easy matter to travel into those almost unknown mountains, for the country is utterly wild and inhabited by bandits who think little of cutting the throats of travellers. The Seabrooks started from Aleppo in a car, for the hire of which and a driver they had to pay a very high price. They drove across a blazing desert, the road leading amid cliffs of clay and sand crowned with mysterious ruins. The wind was like the breath of a furnace and in one place they encountered a vast swarm of horrible grasshoppers, which covered the car and its passengers. They came to Bagdad, where Seabrook left his wife with some kind friends, and here Seabrook met Mechmed Hamdi, an elderly spectacled Turk who knew more of the Yezidees than any one in the country and who promised to accompany the traveller.

Mechmed told him the origin of the devil-worship. God, say the Yezidees, created seven spirits, and the first of these was Satan, whom God made supreme ruler of the

earth for ten thousand years. That was why they worshipped him. But they never pronounce his name: they only honour his symbol and image. Among them the colour blue is utterly barred because it is supposed to have magical properties inimical to Satan. To them fire is sacred, and the visitor must never spit into a fire or put out a dropped match by stepping on it with his foot. Their Scripture is called *Khitab al Aswad,* "The Black Book."

The journey up into the mountains was made on mules and toward evening the travellers found themselves among Yezidee villages, where women were working in the fields and men passed them, wearing baggy white trousers and black tunics. They were not openly hostile, but at the same time showed no friendliness. At last they arrived at a great fortress-like castle, the home of Said Beg, the Black Pope of the Yezidees. In spite of his terrible reputation, Said Beg proved a kindly host who set to work at once to make his visitors comfortable. He had water brought for washing and gave them supper, and they both slept as soundly in Satan's castle as in any house of the godly.

At dawn they were roused with the news that their mules were already saddled to take them into the heart of the mountains to the temple of Satan, and they set out accompanied by Said Beg himself, who is *Mir,* or supreme head, of all the devil-worshippers in Asia. In about an hour they came within sight of the temple with its cone-shaped dome. But there was nothing very stark or terrible about the place, for the buildings were surrounded by olive and mulberry trees and many small stone huts built to house the pilgrims who come from all parts of Asia.

What at once fixed Seabrook's interest was a tower, a white fluted tower with a sharply pointed summit, which

stood on a ridge above the temple. From its top flashed dazzling rays of light. So the story of the "Towers of Shaitan" was true, after all. Here was one of the power houses of Evil.

The visitors were taken into the temple and shown the great stone serpent which glistened black against the light-coloured wall behind it. The priest said it was the symbol of Wisdom. When Seabrook ventured respectfully to stroke it, the black came off on his fingers and the priest told him quite casually that it was kept black with harness blacking brought all the way from England! Beneath the temple was a gloomy cavern carved in the rock and as a favour the visitors were allowed to descend into it. They found the floor covered with water. The Yezidees consider water, as well as fire, to be a sacred element.

They were even allowed to visit the tower, beneath which is a vault where the *Kolchaks* or magicians of the Yezidees make magic. The old priest, named Nadir Lugh, who showed them round, was a decent, kindly soul, and Seabrook and he became very good friends, but the *Mir* himself, though courteous, was not specially friendly. The priest explained that Melek Taos or Satan is not the Spirit of Evil but the Spirit of Power, and that he and the Yezidees believe that at the end of ten thousand years he will be permitted to reënter Paradise.

Seabrook spent three interesting days among the devil-worshippers and came back with the belief that they are not nearly so black as they are painted. A fuller account of his adventures in the East will be found in his *Adventures in Arabia*.[1] This book has a number of photographs, among them a picture of the Tower of Shaitan itself.

[1] George G. Harrap & Co., Ltd., London; Harcourt Brace & Co. New York.

CHAPTER XIV

ANNIHILATING SPACE AND TIME

Sir Henry Segrave's Remarkable Records

A CENTURY ago when Stephenson told people that his railway engine could travel at thirty miles an hour, he was asked what was the good of such speed, for that even if the engine could reach it the driver would die of suffocation, and the passengers of vertigo. Yet before Stephenson's life came to an end he had proved that trains could be driven at fifty — even sixty — miles an hour with no ill effects to any one concerned. In 1928 when Major Segrave was asked what, in his opinion, was the limit of speed that human faculties could endure he answered, "Frankly, I don't know. This can only be decided by pioneer work and researches into wind pressures."

He added that the reaction between eye, mind, and muscle is so nearly instantaneous that he believed one could learn to drive habitually at two hundred miles an hour if the car and the road permitted it. He quoted the case of the two hundred miles Junior Car Club race at Brooklands in which he, Lee Guinness, and George Daller took part. All these were driving at one hundred miles an hour, and all found, before the race was half run, that the speed had become almost boringly slow. It is his opinion that a machine will never be designed so fast that it will be beyond the control of a human being.

Yes, but that will depend on the human being, and there is no doubt that drivers of the type of Major Segrave are

very rare. Henry O'Neal de Hane Segrave was born in the year 1896, so was thirty-three years old when he achieved his amazing record on the Daytona beach of Florida in the spring of 1929. He comes of an old Irish family, of whom the head is Lord Mowbray and Stourton. He was only seventeen when he left Sandhurst to take his part in the Great War, and the sort of work he did may be gathered from the fact that only two years later, at the age of nineteen, he was a major in the Air Force. He was wounded, but came through without serious damage, and after the War made up his mind to take to motor racing as a profession.

He went to Mr. Lewis Coatalen, the famous designer of the Sunbeam Company, and made known his wishes, but Coatalen shook his head. "I'm always being pestered by youngsters who think they can break records but only break their necks," he said. "If you are really in earnest get a car for yourself and see what you can do on the track."

Segrave took him at his word. He bought a second-hand Opel, and tuned her up himself. Segrave, you see, is not only a driver, but a brilliant motor mechanic and a man who knows as much about the mechanism of a car and the materials of which it is composed as most designers. Buying the Opel left him nearly broke, but within a few months he had raked in so many prizes that Coatalen changed his mind and took him on as a driver for the firm. Within a very short time Segrave became known as one of the most brilliant of drivers and he took part in many big contests.

In 1924 he drove in the French Grand Prix, which is perhaps the most exacting of all road races. It is run over a triangle of ordinary national roads which includes a

straight stretch to test speed, a winding stretch to test the road-holding capacity of cars, and a hilly stretch to test their climbing powers. The race of 1924 was held in the Lyons district and something over two hundred thousand people assembled to view it. The State provided two thousand police and two thousand soldiers to keep order, but even this force was hardly sufficient for the task. From five to eight each morning for some days before the race the roads were closed to traffic in order to allow the competitors to make their trial runs. There was always a rush to get off first and a lot of cars usually arrived in a bunch in the first village in a cloud of dust.

This village was called Givois and here was a most dangerous right-angled corner with a lamp-post, and at the corner and below it was a deep drop into a reservoir. On the morning of the day before the race the first car to reach Givois was driven by a German. As he came toward the corner at a speed approaching one hundred miles an hour, he saw a girl standing by the lamp-post. No one had any right to be on the road, but there was the girl, and a very pretty girl too. The German driver got rattled and instead of braking, put his foot on the accelerator. The result was one of the most astonishing accidents in the annals of motoring. The racing car charged the lamp-post at a speed of at least a hundred miles an hour. With a crash like a cannon shot the lamp standard was torn from the ground, while the girl was flung clean over the railings behind it to drop into the water of the reservoir nearly a hundred feet below. When Segrave arrived a moment later the German, instead of being a corpse as he ought to have been, was standing by his car, desperately trying to straighten his front axle with his bare

hands, while the girl — more marvellous still! — was climbing out of the reservoir, quite unhurt!

Next day came the race. The various drivers were all at their pits by the grand stand, feverishly busy before getting away, when cheers rang out and the Minister of the Interior with a company of guests marched up with a band and a file of infantry. Segrave was leaning over his pit with his back to the procession when one of the infantry men, perhaps annoyed that the Englishman was not showing proper respect to the Minister, gave him a push which upset him into the pit among the tires and oil. Extremely annoyed, Segrave came out with one bound and drove a left to the soldier's jaw, which laid him kicking. Bedlam broke loose, but Dario Resta came to the rescue by starting his big machine, which broke into such a roar as drowned band and everything else. Before any further trouble could develop the race was started.

Segrave had an Italian mechanic who was not much use. Halfway through the race, as Segrave's car followed close behind that of Lee Guinness, a tire of Guinness' car burst. Dust, stones, and chunks of rubber flew in every direction, and a piece of the tire whizzing past Segrave's head hit his mechanic on the forehead and dropped him as if he had been shot. Segrave had to leave him at the next stopping place and get a substitute.

That was not the end of the incidents of the day, for a little later, as the cars were approaching a dangerous corner, Ferrari, who was just ahead of Segrave, glanced round and, seeing the pursuing car close upon him, trod on the accelerator. His speed shot up to two miles a minute, while ninety was the utmost pace at which the corner could be rounded in safety. In result Ferrari's car drove

straight through a hedge into the field and hit a great boulder head-on. The car shot straight up into the air, tipped driver and mechanic out into a gorse bush, and struck earth ten yards beyond, a complete wreck. Yet — will it be believed? — neither Ferrari nor his mechanic were hurt!

Even that was not the end of the day's excitements. At one corner there was a quarry close by the road, a quarry no less than four hundred feet deep. As a guard a palisade of railway sleepers had been built up. Bordino, the famous Italian driver, tried to round this corner just a little too fast and his car skidded off the road, slammed into the fence, uprooted several of the sleepers, and hung suspended over the edge of the cliff, the body actually rocking like a seesaw so that the slightest movement would have sent it crashing into the depths. Bordino climbed out over the back, having escaped death by the narrowest possible margin.

When we consider the number of fatal accidents that happen on the open road with cars travelling at comparatively moderate speeds, wonder grows that in motor racing any one ever escapes with his life when things go wrong. Yet the number of fatal accidents on the track is small compared with the escapes. Segrave himself has had his close calls. The narrowest was in the Spanish Grand Prix race at Sebastian in 1926. Segrave was driving the same car with which he had done one hundred and fifty-three miles an hour at Southport and broken the world's record, and he was going out past a stand when he and his mechanic noticed that the people were shouting and gesticulating in a frantic fashion. But he paid no special attention and kept on. Just after he had passed the stand, his

steering gear went curiously stiff, but he kept going at about ninety miles an hour. Without any further warning the front axle snapped, the wheels folded inward, and the car plunged forward, its bonnet ploughing up the road for at least a hundred yards before it came to a stop. Segrave was flung forward on to the steering wheel with a force that rendered him insensible. It was lucky for him that the wheel was not too rigid or the blow would have killed him. It was equally fortunate that the car kept a straight course and did not turn over. When he recovered, he was told that the people on the stand had actually seen the front wheels turning inwards and that was why they had shouted the warnings which he had failed to understand.

Some people will tell you that Major Segrave is a fatalist, like a Moslem. But this is true only up to a point, for this great driver first takes every possible precaution to see that his machine is as perfect as human hands and care can make it, and he knows as much about his machine as the man who designed it. After he has done everything possible, he is calmly content to leave the rest to Providence. One of his strangest escapes was in 1924 when he and Dario Resta went to Brooklands together to try to set up a new series of records — short and long. Segrave was to have tried the short record, but Resta was anxious to get away and go to Eastbourne to see his wife, so asked Segrave if he might do the short series. Segrave agreed. Resta was running at one hundred and twenty-five miles an hour when one of his back tires burst and became wrapped around the back axle, locking both wheels. The car spun round and round, totally out of control, and then shot backward into the corrugated iron fence alongside the track, killing Resta instantly. Corrugated iron, says

Segrave, is the most dangerous material for fencing a racing track.

In 1925 the Sunbeam Company built a new racing car designed to lower the world's record of 150.869 miles an hour recently set up by Mr. Malcolm Campbell. The new car was named *Hush-Hush Number 1,* and was built with great secrecy. *Bluebird,* Mr. Malcolm Campbell's car, had been a giant of two hundred and fifty horse power, but *Hush-Hush* was comparatively small and her engine was only thirty-three horse power. The trial was made in March, 1926, on the sands of Southport. These sands are not ideal for great speed, yet Major Segrave succeeded in making an average speed for two kilometers run in opposite directions of 152.308 miles per hour and in setting the new record of one hundred and fifty-four miles per hour for a flying mile. The trial was not without its excitement, for at one point Segrave struck a slight rise in the sand and the little car left the ground and leaped a distance which was afterward carefully measured and proved to be forty-eight feet with a ground clearance of eighteen inches. As the car came to earth again, her driver was jerked completely out of his seat, yet with his usual amazing skill, he managed to right her and carry on.

During the trials of *Hush-Hush,* before the final test, the Major had another unpleasant experience. He had reached a speed of something over one hundred and fifty miles an hour and wished to stop the car, but when he took his foot from the accelerator pedal nothing happened; the car continued its furious career and was driving straight toward a very unsafe part of the sands. At such a speed every second counts and Segrave, who had diagnosed the trouble as a broken throttle connection, began

groping with one hand along the dashboard to find the ignition switch and cut it off. He could not use his eyes for the purpose of finding the switch because he dared not take them off the distant guiding mark when travelling at such speed. It was quite sufficiently dangerous to take one hand from the wheel when moving at two and a half miles a minute. It was only a matter of a very few seconds before his groping fingers found the switch and turned it, yet even in that tiny space of time the car had travelled more than half a mile.

Hush-Hush eventually reached a speed of 174.22 miles an hour under Major Segrave's pilotage. The next effort to break the world's record was made by Mr. Parry Thomas in a four hundred horse power car which was tried out on Pendine Sands, Carmarthenshire. This attempt ended in a dreadful tragedy. The car ran into soft sand, upset, killing its driver and being itself so completely wrecked that its remains were buried in the sands.

Undeterred by this disaster, Segrave set to work to go one better than his own record. For this purpose Mr. Coatalen designed a giant double-engined car. One engine was in front, one behind, and the two together were reckoned at one thousand horse power. As Segrave himself said, at any speed of over one hundred and eighty miles an hour, designers and drivers both were entering upon the unknown, and all sorts of problems presented themselves in the construction of this new giant. The chief danger appeared to be that if the car travelling at two hundred miles an hour diverged more than ten degrees on either side of its direction of travel it would begin "rotating on its own axis." This "yawing", as it is called, presented a very difficult problem. A second difficulty was

to stream-line the car in such a way that she would remain on the ground. With the ordinary type of body, a car travelling at two hundred miles an hour would put her nose down and turn somersaults.

When completed, the new mystery car had an odd resemblance to a monstrous black beetle. Nothing projected anywhere from the stream-line body. Even the wheels were completely hidden from view. The question of tires was most difficult, for so far none had ever been built to stand such a speed. They were tested out on a revolving belt with a weighted arm, and finally some were produced which would remain intact at two hundred miles an hour for *seven minutes*. New steels were evolved for the building of the car. It may be mentioned here that the motoring world at large owes a tremendous debt to the builders and drivers of record-breaking cars because of the new steels and alloys that are tested out in such trials and afterward used for more ordinary vehicles. A whole series of trials were carried out in the aeronautical laboratory of Messrs. Vickers at Weybridge, where models of the new car were tested in wind tunnels through which were driven currents of air impregnated with chalk dust. The moving stream of air and chalk were photographed and in this way a perfect stream-line model was eventually obtained.

Even then it was not certain what would happen when the great car was given her head. As Segrave said, "The car may fly. She may blow to bits. There is no way of steering a car at that gigantic speed, for she will not answer to her wheel in anything less than a quarter of a mile."

The difficulty was to find a track on which to let out such a car, and the only known place on earth's surface was the Daytona beach of Florida. Here is a stretch of sand twenty-

five miles long, straight as a string and of amazing firmness. It is so hard that you can play tennis on it, and it has the additional advantage of being free from stones or shells. Its disadvantages are that the tide sometimes cuts runnels across it, and that the surf breaking on the bar which runs parallel to the beach causes a faint mist of spray which sometimes fogs the air.

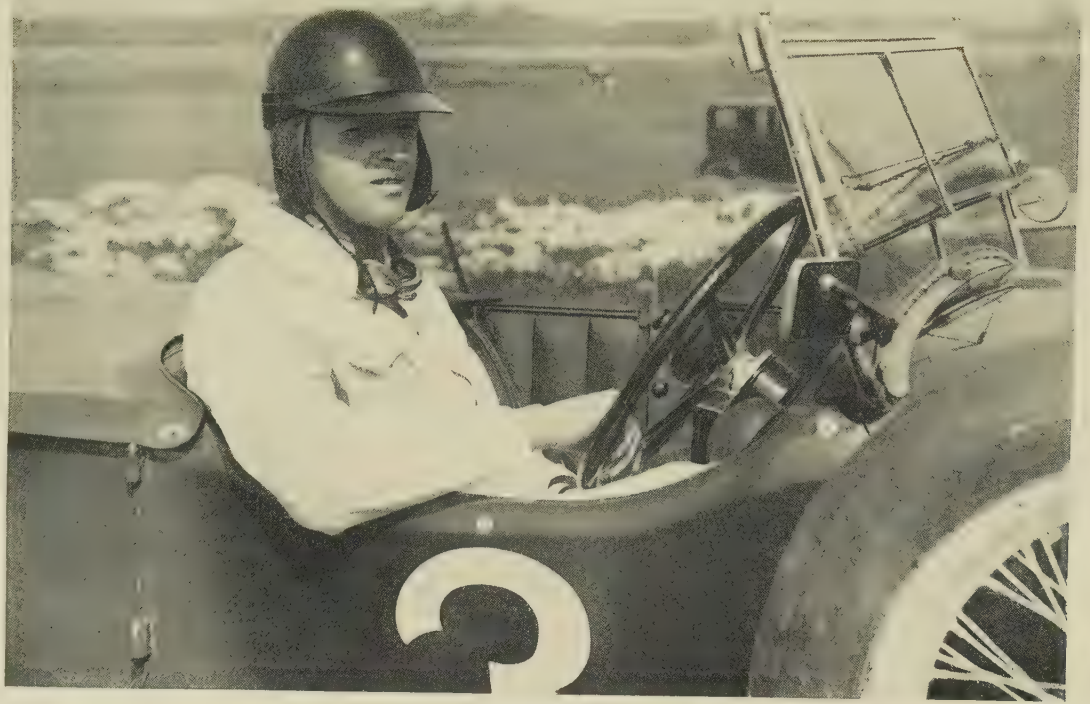
Early in 1927 the great car was taken to America and Major Segrave proceeded to try it out on the Daytona beach. He says himself that when he first started it and heard the frightful roar of its exhaust the thing fairly terrified him. Indeed it was a terrific machine. It weighed sixty-two hundred pounds, had a wheel base of one hundred and ninety-nine inches, and its speed on lowest gear was sixty miles an hour. The trials were not without their excitements. Hurtling down the beach at three miles a minute, Segrave suddenly saw a policeman on his motor cycle coming toward him straight down the centre of the course. Like a flash of lightning the huge car swept upon the man, who seemed quite unconscious of his peril. Segrave was conscious of a blur of blue. He had missed him by a matter of inches only, and when he pulled up, saw the unfortunate policeman crawling out of the sea, into which, in his terror, he had skidded. The actual trial came off on March 23, 1927, and the big car justified itself by beating all records. At one time it exceeded two hundred and seven miles an hour, and the mile was covered officially at a speed of 203.841 miles.

A little later the American driver, Ray Keech, succeeded in exceeding this speed by a slight margin, and from that minute Segrave's one ambition was to build a car which would surpass the American record. Mr. Keech's speed on

his huge Triplex Special of twelve hundred horse power was 207.55 miles an hour, and Segrave wanted a car which would absolutely pulverize this record. He worked it all out, and declared that it was quite possible to get up to two hundred and forty miles an hour, or four miles a minute. But to build such a car required the expenditure of a very large sum of money — more than even British manufacturers were ready to lay down. A patriotic millionaire came to the rescue. "Build the car," he said, "Never mind what it costs. I'll foot the bill." And so the *Golden Arrow* came into existence.

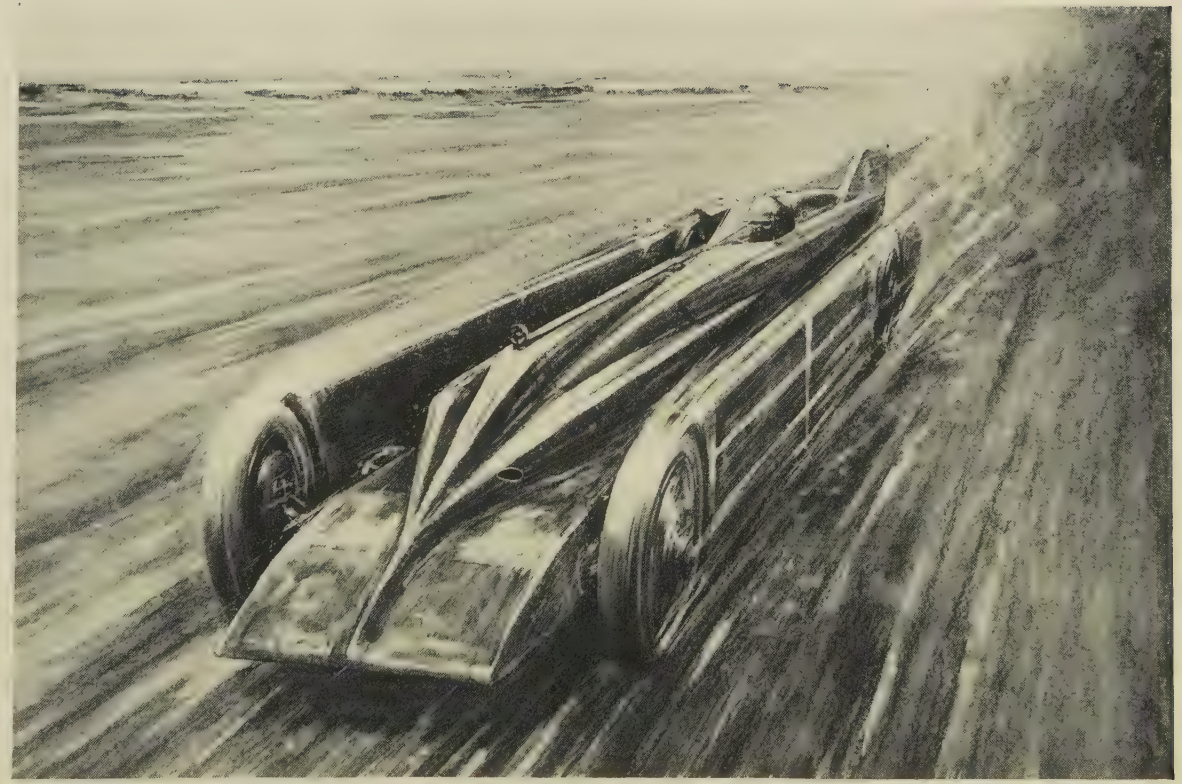
Golden Arrow's engine was a nine hundred horse power Napier racing Aero engine, which, in spite of its twelve cylinders, weighed only eight hundred and thirty-five pounds. It was precisely the same as the engine of the seaplane in which Flight Lieutenant d'Arcy Greig flew at 319.5 miles an hour over the Solent in 1928. This engine is so designed that it can only run at very high speed and on special fuel. It has a single crank case and a single crank shaft. Maximum power and speedy acceleration being essential, the great problem was to obtain a correct engine temperature, and it became evident that ordinary water cooling would not be sufficient. Captain Irving, who designed the car, hit on the idea of placing in the nose of the car a small tank containing ice chemically treated so as to produce intense cold. The water circulating through this ice would be additionally cooled if the engine became too hot.

Golden Arrow was built in the K. L. G. works at Putney Vale in a specially constructed workshop and by men who were all pledged to secrecy. Her cost was probably a record. It is said that the bill for her construction was eighteen



MAJOR SIR HENRY SEGRAVE IN FULL RACING KIT

Photo Alfieri Picture Service



A VIVID IMPRESSION, DRAWN BY AN "AUTOCAR" ARTIST, OF MAJOR SIR HENRY SEGRAVE'S RECORD-BREAKING RUN IN THE "GOLDEN ARROW" ON THE SANDS AT DAYTONA

Photo Central News

thousand pounds. As the car's useful life was not much more than an hour, this works out at nearly three hundred pounds per minute. The body was modelled on the lines of the supermarine racing machine which won the Schneider trophy and was built entirely of aluminum. Since Major Segrave is a very tall man and with great breadth of shoulder, it was a difficult matter to fix his seat in such a way that he should be quite comfortable yet at the same time protected from the terrific gale caused by the machine's furious rush through the air. To give some idea of the extreme care paid to details, Segrave was measured for his cockpit just as a tailor's customer would be measured for a suit. When finished, the *Golden Arrow* had a curious resemblance to a great fish. She was exhibited in Piccadilly before being shipped across, and the then Prime Minister of Britain, Mr. Stanley Baldwin, as well as several other Ministers of the Crown, inspected her.

When Segrave arrived at Daytona he found that all preparations had been made for him. The equipment included surgeons and an operating table, but this grim note had no effect on the big Englishman. Tens of thousands of spectators lined the low bluff above the beach. The course was nine miles long, for it requires four miles to get up to full speed and four more miles to pull up. The spectators included Mr. Ray Keech, the record holder, and Mr. Tommy Miller, the veteran American racer who held the former beach record of one hundred and fifty-six miles an hour. The day, March 12, 1929, was very fine, but conditions were not ideal, for wisps of mist floated over the course. At half-past one Segrave went out for a trial sprint and his time for the mile was announced as one hundred and seventy-seven miles per hour. Then he

made a last-minute inspection of his engine and tires and started for the record-breaking attempt. This time the long, low-hung golden car travelled at such a speed that the photographers were unable to follow it with their cameras. He covered the first mile in 15.55 seconds and the return in 15.57, giving an average speed of 231.36 miles an hour, and by doing so beat the American record by just under twenty-four miles an hour. He had said before starting that his possible speed was two hundred and forty miles per hour, so his forecast was really amazingly accurate.

Visibility was so bad that two arc lamps were erected for him to steer by, and he used ordinary rifle sights attached to the bonnet of the car. Such was his speed that the flag posts rushing by looked like one straight line drawn across a piece of white paper. He had two bad moments. The tide was coming in quickly and in one place he struck a tiny pool of water. Such as it was it upset the steering and the tail of the *Golden Arrow* gave an ugly twist, while the steering wheel was nearly wrenched out of the driver's hands. Then — luckily when quite near the end of the course — the offside radiator burst, and up shot a great cloud of steam and boiling water. The water cut him in the face and the steam hung like a cloud.

Two days later Mr. Lee Bible, an American driver, took out the great Triplex in an effort to beat Segrave's record. He made a fast run at two hundred and two miles an hour and was returning at a similar speed when he ran too near the water. In trying to correct the steering he swung his wheel too far and the huge thirty-six cylinder car crashed into the sand dunes and was completely wrecked. Mr. Bible's body was pulled from the wreckage

just as the Triplex burst into flames. He was, however, quite dead, and so was a photographer, Mr. R. Treve, whom the car had hit.

Segrave had taken another racing machine to Florida besides his car. This was the motor boat, *Miss England,* of one thousand horse power, thirty feet long, seven feet in beam, and equipped with a Schneider Cup engine. A few days after his land achievement Segrave tried his boat out against her bigger American rival. The American boat, owing to a mishap, failed to finish the course, so Segrave captured the double trophy of speed by land and water. He also secured the Wakefield Gold Cup which is given to the holder of the world's land speed record and carries with it a pension of one thousand pounds a year so long as the record is held.

Since this chapter was written two events have occurred to change its tenor. First, Major Segrave received the well-deserved honour of knighthood at the hands of his King, becoming Sir Henry Segrave ; and shortly after, in the summer of 1930, he was killed in an accident to the motor-boat *Miss England II* on Lake Windermere, and thus, still a young man, gave his life while seeking fresh records for Britain.

Before the accident which caused his death Sir Henry had beaten all existing records for speed on water by reaching 98.6 miles an hour, thus regaining for his country a record long held by America. Since then Great Britain has lost this record, which is now held by an American, Mr Gar Wood, with a speed of 127.43 miles an hour. Sir Malcolm Campbell has retained for Britain the land speed record by covering two miles at an average speed of 272.108 miles an hour.

CHAPTER XV

WITH THE "MOUNTIES" AMID ETERNAL ICE

Captain Harwood Steele's Adventures with the Men who "Never Quit"

PROBABLY every man who has felt the lure of adventure coursing through his veins has longed at some period during his youth to join the Royal Canadian Mounted Police, the most picturesque, efficient, and adventurous police force on earth.

The exploits of that force in Western Canada, when capturing lawbreakers, fighting Nature at her worst, or preventing crime, have thrilled millions. But very few people know that for over thirty years these men have been successfully policing not only the empty blacklands of Canada, but the Arctic itself — the Arctic of icebergs and polar bears, a territory within the Arctic Circle commonly supposed to be habitable only by Eskimos and well equipped exploring expeditions.

On the edge of the polar regions, separated by hundreds of frozen miles from aid or succour, there is dotted a little string of detachments, each responsible for maintaining law and order over a territory half the size of Scotland. Imagine it. One hundred men to police a region as large as Europe *minus* Russia — a region of fierce blizzards, ice, and zero temperatures! Each of those men having to spend at least twelve months away from civilisation, knowing that if any mishap occurs to the little steamer which

once a year goes north to the Arctic Circle with relief men, fuel, and food, he will have to wait another year before going "off duty."

Even when the yearly relief ship arrives, the men may not be at their post to greet it. For the Royal Canadian Mounted Police is the force that "never quits", and those lonely Arctic patrols have before to-day spent months and even years trailing a wanted man amid that region of endless forest, mighty mountain ranges, and ice — usually to catch their man in the end.

There you have a picture of how the modern "Mounties" of the far northern group live up to their motto "Maintain the Right." Travelling for thousands of miles through largely unknown country, with temperatures well below zero, and food often short; with blizzards, cold, and starvation all in the day's work — can it be wondered at that every young heart thrills at their very name?

Like all policemen the Mounties are modest. Their exploits mostly take place far away from newspaper reporters in the barren lands which adjoin the Arctic Sea, and stories of heroism and devotion to duty as fine as anything in the history of the British race are recorded only in the laconic and cold wording of their official reports.

Occasionally some one sees these Northern detachments at work, wins their confidence, and hears from their own lips wonderful stories of perils faced and duty bravely done. Then the veil is lifted for a moment and the world realises how these strong silent men have managed to carry white man's justice and preserve law and order to the edge of the very Pole itself.

There are few men with a better claim to tell the great story of the Royal Canadian Mounted Police than Captain

Harwood Steele, the young adventurer-son of the late Major General Sir Sam Steele, the second man to join the force and later its senior superintendent.

Before setting out for the North as the historian of the Canadian Government Arctic Expedition which sailed with the Mounties in the relief ship which carried fresh detachments, fuel, and food to the Arctic in the summer of 1925, Captain Steele had been soldier, adventurer, author, and journalist. But he had never before 1925 written any book so stirring as his record of the heroism of the bravest men on earth amid these icy regions.

The sea journey itself — eighty-five hundred miles up into the ice and back — would be adventure enough to last most of us for a few years. But about the thrills of voyaging into icebound seas on the Canadian Government steamer *Arctic* Captain Steele has little to say. The ship was old and had fought ice and storm for many years. In 1925 she was forced to fight them again. Gales, icebergs, fog, hurricanes, cold — those on the *Arctic* had to endure them all as they edged their way into seas sailed only by adventurers like Amundsen, Stefansson, Sverdrup, Greely, and — the Canadian Mounted Police. Once they were within inches of going down when, in fog, they almost ran head on into the rocky shores of Greenland; yet when he got back Captain Steele could say to the authors: "The hardships of the voyage I would not call hardships at all compared with what the Mounted detachments endure up there in the Far North."

A fifty-mile gale first tried the little overladen steamer within a few days of leaving port, and for forty-eight hours she rolled at angles up to thirty-five degrees, while gigantic waves thundered over her in constant procession.

By the second day the position was so serious that the emergency pump was manned. Every one knew the ship might go down if the gale continued. What would have been the end of that "blow" will not be known, for just when things looked most serious, the *Arctic* sighted the Baffin Bay ice pack, and took refuge in its kind white arms.

The idea of finding shelter in an ice pack may seem strange, but any seaman with experience of the North will tell you that the presence of ice entirely neutralises the effect of wind on the water and keeps the sea smooth.

The *Arctic* had survived the storm, but farther north came another adventure. The ship was in Smith Sound and the sea was an inert and gleaming level, obscured by the most delicate fog of rose and amethyst, through which the midnight sun glowed golden, and silent bergs swept past. Anchored amid this beauty one morning, a large ice pan suddenly bore down upon the vessel, and before anything could be done to prevent it, pushed the *Arctic* back against a towering mountain of ice which lifted its white peak higher than the masthead.

Icebergs have a habit of turning over without warning, or suddenly shedding a few tons of ice. Arctic navigators know this danger, for even a "chip" off a giant berg will crush a small vessel like an eggshell. The captain of the *Arctic* immediately called every one on deck. The ice anchors which moored the ship were got in with a run, and sail was hoisted. It was only just in time, for even as they slipped slowly away another large berg loomed up as though waiting to give the vessel its death stroke.

Hardly had that danger been averted than they ran over a reef submerged near the surface of the water in Rice Strait. For minutes that seemed like hours the ship pounded

and struggled over the jagged edges of the reef, which threatened to deal her a mortal wound, just as Amundsen's little ship, the *Gjoa,* had been pounded on a reef in that same region to the deadly peril of the men who afterward made the Northwest Passage.

Had the *Arctic* stuck fast on that reef, the Northern patrols of the Mounties would have waited in vain for their winter food and fuel, for there would not have been sufficient steam power to get her off. But she scraped off without damage, and left Rice Strait just in time to escape two closing fields of ice which threatened to surround her after all.

These and other adventures, inseparable from the annual voyage north of the supply ship, provided a hundred thrills. But for Captain Harwood Steele and the members of the expedition, the real adventure did not begin until one day in August 1925, when the *Arctic* reached Fram Haven, Rice Strait, and there landed at Kane Basin, the most northerly police depot in the world.

The story of how that lone police post came into being will be told later. It is but one of many wonderful romances of the North, romances woven into the very history of the territory by the men who administer justice with an even hand in those icy regions.

The territory assigned to the Mounted Police in the Arctic Circle is enormous. Up within that triangle of ice and snow Captain Steele met the Mounties on patrol, watched them administering justice throughout the district and to Eskimo tribes who had seen few other strangers except these stern-faced men who had come from nowhere to keep the peace among them. Those Eskimos could easily have killed the little parties of police.

CAPTAIN HARWOOD STEELE ON BOARD THE "ARCTIC," WITH TWO HUSKY PUPS HE BROUGHT BACK TO CIVILIZATION

Photo copyright

THE SUPPLY SHIP OF THE EXPEDITION PHOTOGRAPHED ALONGSIDE A WALL OF SEA ICE

But they didn't. For ignorant as they are they soon learned that if they harmed any man, those same policemen or their comrades would trail the culprit to the world's end and back.

Before Captain Steele sailed back to civilisation he had listened to some wonderful stories which explain why this tiny force is the admiration of all nations.

The police posts or detachments in this bleak solitude consist of three men each — generally a sergeant or corporal and two constables. Considering the size of the area supervised by each detachment, and the amount of work it has to do, such numbers may seem ridiculous. But it is impossible to make each detachment stronger, for, as we have said, the total number of men available for policing the Arctic "Empire of To-morrow" is only about one hundred!

Imagine one hundred policemen controlling half of the continent of Europe and you will have some idea of what is expected of these men. The land area of the Canadian Arctic islands alone totals 535,000 square miles. But it has long been known that one Mountie is capable of doing the work of a regiment.

The members of an Arctic detachment, living in a group of wooden buildings — house, storehouse, and blubber shed — upon the lonely coast, or on some lonely island, are charged not only with the enforcement of law and order, but also with all the work of government in a region which may extend for hundreds of miles. A Mountie is first of all a policeman, but he is also a coroner, justice of the peace, postmaster, customs collector, game warden, and many other things besides. He will deliver your letters and collect your taxes.

And no matter where you may be when you break the law, he will make you pay for it.

Some of this work of running the country can be done from a chair in the detachment house, but by far the greater part of it involves constant travel under the frightful conditions usually encountered during an Arctic winter. In one case a journey may be made simply to see whether the people of a district are behaving themselves; in another it may be made to look into a cruel murder or carry out a dangerous arrest. Whatever the object, these expeditions away from the police detachment are always called patrols.

The means of travel in the Arctic are limited — during the summer to ship, boat, or canoe moving upon perilous rivers or floe-infested seas, in winter to dog teams running upon the treacherous ice. On their winter journeys the patrols employed in the Arctic meet winds so powerful that their dogs are hurled backward in a struggling mass, completely out of control. They encounter blizzards raging so violently that all movement out of camp is checked for days, and they experience temperatures of thirty, forty, and even fifty degrees below zero.

Often their sledges are smashed on the huge ice ridges; often the ice opens beneath their feet to drown them, or to cut the feet of the dogs to ribbons, or to soak the feet of dogs and men in freezing water. Hands and faces are bitten to the bone by frost, or starving men are forced to eat their dogs, their harness, their very clothing. Starving dogs have been driven on of necessity for as many as fourteen days without food; while, not infrequently, death awaits the patrol at the end of the long trail.

Such are the dangers and difficulties which every

Mountie must face in earning his pay of nine shillings a day. Then there are the primitive conditions; the awful loneliness of living without letters or white visitors for twelve dreary months on end; the risk of serious illness beyond the reach of doctors, and of loss through fire; the severe winters, when the long polar darkness must be faced and endured; finally the dread lest the little steamer should sink on the way northward with supplies and leave the men to live through a long northern winter without having their food supplies replenished.

All those conditions are faced, and faced cheerfully, by these heroic exiles of the British Empire, because the Arctic, with its furs and minerals, is very valuable to Canada, and because the Eskimos and the white men trading with them must be governed and protected. Often, when passions run high and two men face each other in anger up there in the wastes of the North, one thing only keeps the finger off the trigger of the gun — the knowledge that four hundred, five hundred miles away there are a couple of men, hard as whipcord and relentless as Judgment, who will hear that shot, it may be months later, but who will surely hear it and bring the man who fires it to the gallows.

"I think that one of the biggest thrills of my life," Captain Steele told the writers, "came to me when I was in the Far North in 1925. The expedition of which I was a member had occasion to visit a place called Fram Haven, in Rice Strait, Ellesmere Island, little more than eleven degrees from the very top of the earth.

"All around it are rocky hills — dark, cold, forbidding. Death dominates it — the doctor of Sverdrup's Norwegian Expedition lies buried there, and a few miles away is the

site of Starvation Camp, where almost all the gallant adventurers of Greely's United States Expedition one by one met a ghastly fate forty-two years ago. Not a living thing was stirring that day, and all over it lay utter silence.

"But in the valley, at the foot of Fram Haven Glacier, we found a shack. Over the door was this inscription in English and Eskimo: 'Kane Basin Detachment, Royal Canadian Mounted Police.'

"Think of what that meant — think of the sheer grit, the untiring effort, which had put that building there, so many thousands of miles beyond what people normally consider the limits of civilisation: think of the courage which had set up a building to stand for law and order at the world's end!

"But there was more to come. One of our party discovered a small pile of stones near the shack, and in it this message: 'Corporal T. R. Michelson, R. C. M. Police, Craig Harbour, Ellesmere Island, visited Kane Basin Post on Friday, April 24, 1925, in company with Eskimos Klishook, Merkshuk, Inneuitsh. Kane Basin Post, R. C. M. Police, April 24, 1925.'

"That was all. But here's the point. The message so discovered was the record of the most northerly police patrol ever made in the whole world at that date. Made by a single white man accompanied by only four natives, half the time by only one, and made in deadly peril, a patrol equal to anything in Arctic history."

That story is a counterpart of others which the historian of the 1925 expedition related to the authors.

At Pangnirtung, Baffin Island, was a detachment of four men, of which Sergeant J. E. F. Wright was the

leader. The patrols made by this detachment in 1925, involving journeys under conditions like those met with by Corporal Michelson, ran up a mileage record which has probably never been surpassed by any other four white travellers at work in the Polar regions during a period of the same length.

From July 22, 1924 to September 20, 1925 Sergeant Wright's patrols had to deal with a sensational series of murders in a native settlement called Keevetoo, on Baffin Island. They got their men in the end. And here it must be stated that the greatest work yet done by the Mounties in the Arctic has been putting down violence among the Eskimos and teaching them that they must not kill. The primitive natives of the region value human life very lightly and frequently commit murder. In ten years, however, the Mounted Police have dealt with every one of these crimes, following the criminal into the most distant hiding places, and making an example of him.

Here let us tell you, in Captain Steele's own words, the story of one of the finest things any Mounted Policeman ever did.

"An Eskimo named Nookudlah killed a white trader named Janes at Cape Crawford, on Baffin Island. This point is four hundred miles north of the Arctic Circle, but that made no difference to the Force — the murderer had to be found and punished.

"Staff-Sergeant (now Inspector) Joy, among the most distinguished of all Arctic trail-runners, who was in civilisation at the time, was ordered North to investigate. He sailed in a Hudson's Bay Company steamer, landed on Baffin Island, and spent the whole winter making the investigation and gathering the witnesses entirely alone.

During this time he had to travel many hundreds of miles through awful storms, in the cold and darkness of the long Arctic night, and to live like a native among the Eskimos, any of whom might well have attempted to kill him at any moment. But he stuck to his task, and at last found that Nookudlah was the man he wanted.

"Then, in the midst of these hostile natives, he arrested him. He also found the body of Janes, held an inquest, and, in fact, took all necessary steps to make the business legal. A court was assembled at Pond's Inlet, not far from the scene of the crime, officials being sent specially from the South to conduct the trial. Nookudlah got what he deserved, and the Eskimos were taught clearly that they could not escape the Mounted Police — so clearly that no one has broken the law in that area since."

The longest patrol ever made in the Arctic had to do with another murder. This was the Bathurst Inlet patrol, which achieved international fame, as well it might.

Two white men were killed by the Eskimos away up on Bathurst Inlet, many hundreds of miles from civilisation, on the shores of the Polar Sea. Word of the crime did not reach the Mounted Police until nearly a year later, and the expedition organised to track the murderers was at work for three years and a half, while it was not until more than five years had passed that the case was finally ended.

The first move made by the Commissioner on learning of the crime was to send a party under Inspector W. J. Beyts, from Halifax, Nova Scotia, to the police post at Churchill, on the Hudson's Bay, with instructions to plant a supply depot on Baker Lake for the use of the patrol which was to conduct the inquiry.

With great difficulty the Inspector managed to establish

the depot during the next summer, and in the following winter he made two attempts to push on to Bathurst Inlet. But the little party, which was so coolly preparing to march thousands of miles through a wilderness entirely empty of human life, where even a minor mistake might mean disaster, was unable to get forward.

There were very few deer in the district that winter, and without deer, on which the patrol was chiefly dependent for food, no advance could be made.

Still the Mounties persisted. Another summer came, bringing Inspector E. H. French, a renowned trail-runner, to relieve Inspector Beyts and carry on the work. Late in the following winter, French finally got started. He had with him Sergeant Major T. B. Caulkin, and four natives bearing the picturesque names of Joe, Bye-and-Bye, Quashak, and Solomon.

With dog teams and canoes they struggled on, month after month, across a terrible country, until at last, after enduring awful hardships, they won to the Inlet.

From that point they found it necessary to go on to Bernard Harbour, where there was a Hudson's Bay Company post. Occasionally natives who knew something about the murder were met and their evidence was recorded. By the time Bernard Harbour was reached the patrol was seriously short in nearly all its supplies. The men had suffered intensely from cold and exposure; their hands and faces were like raw beef from frostbite; they had been snow-blind many times; they were in rags, and the two whites were worn to shadows on account of the meat diet upon which they had been forced to live.

The patrol had now finished its inquiries. It found that

the victims had driven the natives to extreme measures by ill treatment, and so did not arrest the murderers, but it impressed the meaning of the white man's law so thoroughly that it has been observed in the district to this day.

French's remaining task was to get back to Baker Lake. He refitted at Bernard Harbour, then struck out with dogs and sleds for the lake, which the party did not reach until over three months later. Starvation stalked beside them through the weird white silence. For days they saw no deer, and at last had to kill some of their dogs, in order to feed the rest.

"It looks like our last patrol," the Inspector wrote in his diary. But the Great Red Gods, who love brave men, sent a herd of deer across the path of the famished men and they were saved. And so in time they stumbled back to Baker Lake, following a journey of forty-five hundred miles and an absence of ten months, during which they had established a record for the longest Arctic patrol ever made in one journey while on duty.

Sometimes these far northern policemen found Death actually waiting for them at the end of the trail. The stories we have related show that his grim figure is forever at their heels when they are travelling in those wastes. Usually they escape him, for they are efficient adventurers, these Mounties. But not always.

There is one patrol which did not escape death, which took a gambler's chance and lost. This was the famous Fitzgerald Patrol which some years ago set out with the Christmas mail from Fort Macpherson to Dawson. Some three hundred miles out they lost their way, food ran short and after enduring terrible hardships, Inspector Fitzgerald and Constables Kinney, Carter, and Taylor perished. It

THE "ARCTIC," RELIEF SHIP OF THE CANADIAN MOUNTED POLICE, WHICH CARRIED CAPTAIN STEELE TO THE MOST NORTHERLY POLICE POST ON EARTH

Photo George H. Valiquette

is typical of the spirit of the Mounties that the gallant Inspector's last act was to secure the mails under his body, so that they should be protected from the blizzard. They were later found intact.

In the face of deeds like these it is natural that Captain Steele, born in one of the Mounted barracks and brought up with the Force, should not wish to talk about his own eight-thousand-mile journey with the patrol ship through the Eastern Arctic. During that journey the expedition went through many dangers. It battled with all the forces which wild Nature hurled against it, as though jealous of the men who were travelling northward to see the Force at work and learn their stories. Many times he was near death, but he came back — to talk, not about his own narrow escapes, but of the wonderful work which the Mounted is doing up on top of the world, where over thousands of miles of empty white silence they have carried British justice and made life safe for all.

At the beginning of this chapter we told you how Captain Steele visited the Kane Basin Detachment, then the most northerly police post in the world. The Mounties are never content to rest on their laurels. In 1926, on the fourth consecutive attempt, a lone expedition pushed even farther to the north, and to-day the Mounted post nearest to the North Pole is the Bache Peninsula Detachment, just fourteen miles to the north of Kane Basin. It stands within eleven degrees of the Pole and is the most northerly human habitation of any kind.

The trail to Bache Peninsula began in the distant south, over thirty years ago, when the Mounted Police, always a frontier corps, first drew up its thin red line in the Yukon. From that moment there was no retreat. Step by step, mile

by mile, the outposts pushed on. From the United States border to the Pole itself they have fought their way in the face of death by freezing and starvation, and in awful loneliness. They have protected all men alike, Eskimo, Indian, and white. They have enforced the law as sternly as it is enforced in London. They have relieved the destitute and diseased. And to-day at Bache Peninsula—the policemen who carry out the king's law in the loneliest spot on earth — they turn their eyes toward the North Pole itself, waiting for the order to push on still farther.

And so their great story unfolds, written in sacrifice and service by the finest body of men in the world. Adventurers all!

CHAPTER XVI

DODGING DEATH IN WAR-STRICKEN CHINA

The Amazing Story of General Frank Sutton, M.C.

WHEN the long-drawn-out civil war between the Northern and Southern forces of China was at its height vague reports reached London of a "mystery" Englishman who was serving as Munitions Minister to Chang Tso Lin, the Northern war lord, and supplying the armies of the Peking Government with guns and shells.

For weeks his name was unknown, for little reliable news came from the war-devastated regions of the once mighty Yellow Empire. All that could be said definitely was that the unknown Englishman was an adventurer who had served with distinction in the British Army during the Great War, that he had only one arm — having lost the other in battle — and that he was finding Adventure with a capital "A" with the armies that were seeking to stem the onward march of the victorious Southern "rebels" along the Yangtse River in the heart of China.

More weeks passed, and then one day this amazing soldier of fortune arrived in London, and the world learned from General Frank Sutton, M. C., the only Englishman of our generation to hold high office in a Chinese army, the most astounding story of adventure since Lawrence returned from Arabia.

When the Great War ended in 1918 Frank Sutton found

himself left with one arm instead of two, and, as he expresses it, "a smattering of knowledge about railway construction, chemistry, mechanics, and general civil engineering: a keen interest in bombs, and just sufficient capital to enable me to retire quietly into the country and live a respectable life." But Frank Sutton had a keen appetite for adventure. Any sort of adventure, so long as there were big stakes to play for. "It is not good for a man under forty to settle down," he told his friends, and after looking at a map of the world to find some locality that promised adventure he set out for the gold fields of Western Siberia.

His subsequent adventures in the land of the Bolsheviks would fill this volume, but we have room here to relate only one — the biggest of all — and that did not begin until he had escaped death a dozen times in Russia, fought in a Russian revolution, been thrown into prison there, and finally escaped across a river that marked the boundary between Russia and China, with twenty thousand pounds made by a year and a half of dredging for gold and bartering stores.

With this little "nest egg" he reached Shanghai and tried by investing his money to make more. But the Chinese civil war was at its height, the whole country was overrun by rival armies, and very soon he had not only lost all he had, but seven thousand pounds besides.

Looking round for a way to retrieve his fortunes, he decided that as war was at the moment the main industry in China, the quickest way to become rich was to take a hand in it by joining one of the local armies and showing them how to win battles. After all, bombs were his hobby, so why not use his knowledge to earn a living, especially as by helping the Northern war lords who were opposing

the spread of Bolshevism in China he would be saving the country from an anarchy worse than civil war.

Having made up his mind, "One-armed" Sutton sailed for Hankow and there spent two months in trying to interest Wu-Fei-Fu, the biggest war lord at that moment, in trench mortars. He had had a big experience with these guns during the Great War and was especially interested in the famous Stokes gun, while the Sutton bomb fuse was his pet invention. All the rival war lords were shouting for more men and more guns and outbidding each other to get them, nevertheless the negotiations with Wu fell through.

Soon after, a Chinese called at Sutton's flat at Hankow and said that he was of the army of General Yang Sen, the war lord of Szechuan, and wished to talk about guns. He had, apparently, heard about the specimen trench mortar which Sutton had with him at Hankow and wished the Englishman to go to his headquarters and demonstrate it. If the gun was satisfactory, his General-in-Chief would at once order a quantity.

This sounded more like business, but when Sutton turned up Szechuan on the map he found that it was three thousand miles away, up the Yangtse River, and none knew better than he did that when once he got there it might be very difficult for a solitary foreigner in the middle of China to get back again.

He pointed this difficulty out to the Chinese.

"Oh, we have a population of sixty-seven millions," replied the General. "You will be well paid."

To frighten him off, Sutton stated that he would go to Szechuan for three thousand dollars, cash down — a dollar a mile for all that long voyage into the heart of China.

The General agreed that the price was reasonable and went off, saying he would be back with the money in a few minutes. The Englishman did not expect to see him again, but as in any case he did not want to go so far inland, that did not worry him. Ten minutes later, however, the Chinese returned, and placed on the table three thousand dollars.

"There's the money," he said. "We are in earnest."

After this there was nothing for it but to set out for the remote country upriver as per contract — and the only problem was how to get the gun on board a steamer without the customs men at Hankow spotting it. However, a few pounds to one of the engineers on the river steamer worked like a charm, and that night the gun was safely stowed aboard in a sack disguised as a spare propeller shaft, while the shells to be fired from it were labelled "engine room spares."

After steaming upriver for ten days and nights, Chunking, the capital of Szechuan, a city of seven hundred thousand inhabitants, came in sight — a mass of tumbled roofs and pagodas rising tier upon tier up the hillside from the water's edge. The harbour was alive with soldiers and flags and as the steamer drew alongside a band burst forth into a Chinese imitation of "See, the Conquering Hero Comes!" and the guard of honour presented arms. Evidently if Chinese soldiers were not too good at fighting, they were useful to welcome distinguished visitors.

That night General Yang Sen, the local war lord, gave a magnificent dinner in honour of the Englishman, and the next day the General, his staff, and Frank Sutton went four more miles upriver to the mint, which like all the other mints in China had been turned into a munitions factory or arsenal.

Yang Sen, the visitor discovered, was the most powerful military chief for hundreds of miles around, and possessed almost unlimited wealth by virtue of the fact that he controlled the salt mines of the province. Salt is a very valuable commodity in China which has always been taxed, and these mines yielded Yang Sen a million pounds a year. It was not surprising, therefore, that he could afford to offer an expert British munitions adviser a contract at two thousand pounds a month.

The mint itself was a large collection of buildings set round a beautiful lily pond, in the centre of which was a marble pavilion on a small island. This building was handed over to Sutton as a headquarters, and he was placed in command of the garrison of two hundred and fifty soldiers. With these men to help him he settled down to his task of turning out guns and shells. He was the only white man for three thousand miles, and if anything happened no help could come to him, for no one knew that he was there. But he did not stop to worry about that; he had come to China for adventure, and he looked like finding it.

Five months passed in perfect peace, during which the arsenal turned out about eighty guns and fourteen thousand shells. When not actually manufacturing munitions, he trained and drilled his tiny garrison of two hundred and fifty men, and succeeded in turning them into the smartest soldiers in China.

At length Yang Sen announced that he was going south with fifteen thousand men of the Second Szechuan army, which was the local force, to chastise the First army, which was becoming restive, after which he proposed to march north against the Third army, which was also showing signs of revolt. This plan of campaign looked like causing

trouble, for in China the beginning of civil war is usually heralded by two sections combining against a third, which in this case was Yang Sen and his body of local troops.

Frank Sutton foresaw trouble and plenty of it, so he set his men to work fortifying the mint, digging trenches, protecting them with sandbags, and generally fitting the building to withstand a siege in a way unknown in China.

The mint stood in a high position approached by three valleys. Sutton's next task was carefully to take the range of these three valleys up which the enemy must approach, and mark the various distances with white posts, so that all three could be swept with a deadly fire up to two miles' range.

Meanwhile Yang Sen had departed, leaving Chun-king, his capital, garrisoned by five thousand men. Weeks went by without news of him. Then came rumours that revolting troops of the Third army were approaching, and that they were as numerous as the grains of rice in the fields.

At last the blow fell. One bright morning Frank Sutton woke up to find shells screaming over his arsenal, masses of besieging troops concentrating in the three valleys, and the gallant garrison of Chun-king in full flight. At once his defending guns came into action. The siege of Frank Sutton's Chinese army had begun. Inside the mint were just over two hundred soldiers and the English commander; outside were forty thousand Chinese troops in revolt. Things didn't look too bright.

The battle continued for eight days. The besieging force were equipped with German field guns and used shrapnel. Their shells ripped the roof off the mint and killed about seventy of the tiny defending force, but the rest of the men stood fast. The reason for this was that the mint still held

the moneys belonging to the Province, and every second day Frank Sutton went to the manager of the place and demanded another box of silver for the troops. The manager knew that if the enemy got inside they would carry off the lot, so he cheerfully handed the money over. In China the pay of the soldiers is usually months or years overdue. During that siege Frank Sutton's men were the best paid troops that China had ever known, and they vowed that they would stick to him to the end.

At the end of the eighth day two messengers from the commander of the rebels approached the mint, bearing a white flag and asked Frank Sutton to accompany them to the headquarters of General Ma Jui, the commandant of the besiegers, to arrange an armistice.

The Englishman had not slept for more than an hour at a time for over a week, and was not, therefore, feeling particularly bright or diplomatic, but a white flag looked genuine, and the odds were still two hundred to one against him if he fought it out to the end; so he went off just as he was — in an old khaki shirt, a pair of football shorts, and dirty knees. And he took with him an interpreter and a couple of revolvers.

General Ma Jui sat at a table in the centre of a house in a village packed with troops. Five or six of his staff were beside him and an armed guard with fixed bayonets round about.

What happened after that is better told in General Frank Sutton's own words, as he related the story to the authors.

"As we entered a murmur ran round and my interpreter went ashen with fright.

" 'They are saying that we are going to be murdered as soon as we get outside,' he whispered.

"I tried to think quickly. A diversion was the thing to give one time to act.

" 'Tell the General,' I said, 'that it is not courtesy to receive an honourable opponent with fixed bayonets, and ask him kindly to order his men to pile arms.'

"The interpreter began to translate this, and at once the guard piled arms of their own accord.

"The clatter of their rifles seemed to arouse General Ma Jui. He whipped up a revolver which was lying on the desk beside him, and I found myself looking down the barrel for one horrid fraction of a second. A spurt of flame, almost in my eyes — we were only six feet apart with the table between us — and a bullet cracked by my ear.

"My hand flew to my holster, and even as he fired again I let drive at him from the hip, plumb into his stomach. He sagged, flopped down and his head hit the table. He was dead."

Pandemonium broke loose at that instant. Every one started firing blindly. The staff dived at Sutton, who dived for the door. His interpreter was shot dead by his side. Sutton himself found his way out of that death room blocked by two burly Chinese, and shot them both in order to get clear. The next minute he was outside and running for his life through the rice fields toward his fort.

He beat all records for the three-mile championship of South China that night. Arriving safely at his fortress, he paraded the men and told them that the time had come for them to clear out or join the opposition, whichever they liked. Next he raided the mint and secured a few more boxes of silver. Some of it he split up among the soldiers who had stood by him so well. The rest he took as two months' pay in advance in lieu of notice and loaded it on a

powerful motor boat which he kept on the river ready for emergencies.

In the first glimmer of dawn, Sutton and one Chinese boy started up the engine and the motor boat slipped out into the stream. It was too frail to carry them far, especially as both banks were in the hands of the enemy, who would certainly spot them when full daylight came, but he hoped to find a steamer which they could board. His luck was in, for he sighted a British cargo steamer in midstream and got aboard.

Those were the days when British and other foreign vessels were being shelled daily along the Yangtse River by the Southerners, and the ship in which Sutton returned to civilisation was fired on continuously for miles. Finally they reached Ichang with the funnels and upper deck looking like pepper pots.

At Ichang Frank Sutton heard that his late employer, Yang Sen, had been defeated and was on the run, so it was evidently hopeless to expect further work from him. After looking round he decided to make his way to Mukden, where Chang Tso Lin, the famous ex-bandit and Manchurian war lord, was showing himself to be something like a real soldier, and declaring that he would fight anarchy to the death.

So one day the adventurous Englishman presented himself at Chang Tso Lin's headquarters at Mukden and explained to the war lord's son, who spoke fair English, that he could make better guns and shells than any other man in China.

Young Chang needed a little convincing, for Sutton had lost his guns, plans, and papers in his previous adventure but perhaps news of events in Szechuan had reached the

Northerners. At all events, they gave him control of another mint that had been turned into an arsenal and he set to work again.

After four or five weeks he produced a gun which promished to give a satisfactory performance, and Marshal Chang Tso Lin announced that he would attend the test in person and see what this stranger could teach him about guns. The forthcoming Sunday was fixed for the big event, which was to be held on a plain five miles outside the city.

The following morning, when two thousand troops were already lining the streets, Frank Sutton knocked over and smashed his mirror while shaving. This meant bad luck, so he telephoned to Chang Tso Lin's headquarters to say that the test was off. It was eventually held the following day, and everything went splendidly until it came to a question of terms. The wily Chang Tso Lin said that Sutton's price for making guns was much too high. He further informed the Englishman that a Chinese gunnery expert who had worked under him in his factory at Szechuan and learnt all about trench mortars and shells, had offered to control the arsenal for a much lower salary.

"Very well," replied Frank Sutton. "Let this man and I fight a duel at a thousand yards range with our respective guns, and you give the job to the survivor."

The idea of a duel between the rival experts appealed to Chang Tso Lin, who at once agreed.

The site chosen for this strange combat was a plain outside Mukden, from which rose a little hill. The hill would hide the duellists from each other and reduce the duel to a test of range-finding. Frank Sutton felt quite happy about the result, for he had some extra-special "winged" shells with fan tails on them saved up for the usurper from the

South — shells that the Great War had taught him to "lob" with great accuracy.

Who would have proved the victor in this strange fight, in which trench mortars were to have been used instead of pistols, will remain a matter of doubt, for some one gave Sutton's rival the tip that the Englishman was deadly at gunnery of this sort, and the day before the duel was to have taken place he packed up his traps and cleared off to Shanghai.

Frank Sutton settled down to his real task of making shells, hoping to prove to Chang that the only thing he needed to win the war he was waging with the Southerners was a real munitions expert. But he was not left long in peace. In China the news that some one looks like making money spreads quickly, and Rival Number 1 had not reached Shanghai before Rival Number 2 appeared on the scene.

This new arrival did not believe in fighting duels. He knew a safer way of spiking his opponent's guns than that. He set up a little factory only two hundred yards from the building in which Sutton was working and by a campaign of bribery among the Englishman's workmen secured copies of all Sutton's carefully guarded plans and began turning out similar guns and shells. This much accomplished, he let it be known that he could make anything that the English foreign devil could turn out, only his prices were lower and his guns were better.

Here was a serious challenge to Sutton's plans, for there was no chance of a contract from the Northern war lord while some one else was undercutting prices. And bribery is not a punishable offence in China. It was evident that the "little wart", as Sutton called the yellow intriguer,

must be taught a lesson, and he proceeded to make plans accordingly.

Those plans involved the invention of a new type of shell into which was put a heavy fuse-cap which would cause a premature discharge in the barrel and blow up the gun and any one near it. These shells were made in Sutton's factory under the cloak of great secrecy — the workmen being sworn not to reveal the details to any one.

In China the greater the secrecy the more certain it is that your rivals will spend good money in bribery, and so learn all about the secret. That Sutton knew. He intended his rival to know all about that "super shell" as the only way of teaching him a lesson.

While these new shells were being made at his own works, Frank Sutton wandered off into the city to a quiet little blacksmith's shop and there made enough of his own shells — an improved type — to give a demonstration against his rival should occasion arise. It did not.

A few days later he was interested to learn that the clever Chinese "expert" had met with a serious accident while demonstrating a new and improved type of shell which he had evolved after long and careful research! Details showed that the very first shell fired had exploded in the gun and blown up the whole gun crew, and the rest of the shells had been equally disappointing.

Whether the too-clever Chinese ever realised how he had been outwitted is not known. After this unfortunate accident, he decided to make shells elsewhere, and thus Rival Number 2 passes out of the story. After his departure Sutton had a serious talk with Chang Tso Lin and secured a contract on his own terms.

A large new factory was built and for a year life pro-

ceeded busily and peacefully, apart from the fact that Sutton had found it wise to paste paper over all the windows of his house to avoid being shot at during meals by those who objected to his success. In that time between two and three hundred guns and some hundreds of thousands of shells were turned out — enough munitions to make all the difference between victory and defeat in a land like China.

Chang Tso Lin arranged a full dress parade of the Sutton guns and they looked very impressive; it was a useful piece of propaganda for a month later war was renewed between Chang and Wu Fei Fu, one of the Southerners, and the Northern forces needed every gun and shell they could lay their hands on.

By this time the one-armed foreign "giant" who, according to rumour, was turning out hundreds of guns a day for Chang Tso Lin, had become a legend among the Southerners, and naturally Chang's spies spread by every means in their power these reports about the "mystery man" who made the finest guns ever seen in Asia. So well did they cast a veil of romance over Frank Sutton and his munitions factory that these reports even reached London, and English newspapers began asking who this lone white man "who stood behind Chang Tso Lin" could be.

Chang himself had now realised that Sutton might be the one man who could save his armies from defeat, and he appointed the Englishman to his staff and gave him all the men and money he needed in order to pour out munitions at record speed.

Warfare in China is an art which differs somewhat from war in other parts of the world. For one thing, if you can frighten the enemy before a big engagement, the victory is half won. Similarly, if your own troops can be made to

believe that they are on the side of the big battalions, nothing will stop them. Frank Sutton had learned these facts and now he decided to turn them to advantage. He collected all the guns he had made, placed them wheel to wheel and then filmed the lot over and over again, so that the film when shown gave the impression of an endless chain of guns stretching apparently for miles.

When the film was exhibited in Mukden and other Northern cities, every one cheered the thousands of guns which were going to blow the Southerners off the earth. Later, the film was "plated" in the South by a spy who let himself be captured, and the Southerners, who knew nothing of faked films, were correspondingly depressed.

That film undermined the *moral* of the Wu Fei Fu's soldiers and contributed in no small measure to the victory which Chang Tso Lin gained in that particular "war."

Other wars were brewing, however, and there were signs that the Southern war lords were likely to make a combined move against the dictator who ruled Manchuria, so Chang ordered Sutton to extend operations. The one arsenal became three, and the Englishman found himself working harder than any other man in China. At that time it is doubtful if he could have thrown up his job had he wanted to, for he had accepted an appointment on Chang's official staff and if he had signified his intention of clearing out he might have been quietly "put away", on the principle that dead men tell no tales.

The output of the three arsenals was good for China but only about one fifth of what a similar number of workers would have turned out in England. The Chinese are good mechanics and learn quickly, but the curse of the land is bribery and every one from top to bottom wants and

GENERAL FRANK SUTTON, M.C., PHOTOGRAPHED WITH A SHELL OF HIS OWN MANUFACTURE

Photo Topical

THE GREAT WALL OF CHINA

The scene of the amazing adventure in which General Sutton led a Chinese army in battle.

Photo Underwood

expects to make a bit "on the side." Mukden had never seen such an efficient employer as Frank Sutton, but even he could not stop bribery entirely.

Meanwhile Wu Fei Fu, then next to Chang the most powerful man in China, was becoming unpleasant again. He was at this time the war lord at Peking, and not content with one defeat he decided to send his armies against Chang Tso Lin for a second attempt to subdue Manchuria.

Various minor engagements took place north of Peking and then Wu massed forty thousand troops under the Great Wall of China some forty miles north of the city, where he was not only in an almost impregnable position, but commanded the railway and could stop any trade of which he did not approve between Chang's territory and Tientsin, an important treaty port, on the coast, and a place of great commercial importance to Britain.

Faced with this definite challenge to his authority, Chang sent for Frank Sutton and asked him if he could clear out this "hornet's nest" behind the Wall. Thus it came about that for the first time since the days of General Gordon and the Taiping Rebellion an Englishman commanded a Chinese army in battle and led them to victory.

Before relating the story of this climax to all Frank Sutton's adventures inside the Yellow Empire, a few details must be given about the Great Wall, which Chang's troops, led by Frank Sutton, had to storm.

The Great Wall of China is fifteen hundred miles long, running from the sea into the heart of Asia, skirting the mysterious frontiers of Tibet. Fifteen to twenty-five feet thick at the base, and from twenty to twenty-five feet high, it winds across Northern China, topping the hills and crawling snakelike through the valleys —

towered and turreted every two hundred yards. So it has stood since 215 B.C. — a silent barrier erected to protect the early Chinese civilisation from the barbarians of the West. Today nobody knows the name of the engineer who planned it, but it is known that countless thousands of prisoners spent their lives in building this most amazing of all works of man.

It was behind this rampart of the ages, directly north of Peking, that Wu Fei Fu had concentrated his troops. Against him marched Frank Sutton at the head of a section of Chang's army, plentifully supplied with guns and shells upon which he could rely because they had been made in his own arsenals.

The story of the battle which followed — which will remind well-informed readers of the modern adventure of Colonel Lawrence's stand against the Turks at Petra — is best told in General Frank Sutton's own words:

"I moved against them with some thousands of fairly well-trained men and a good show of guns, including mortars, as I intended to mine, breach, blow up, or scale the Wall somehow.

"Luckily, there was no need to damage it seriously. I found that the section of the Wall held by Wu consisted of an earthen core faced with a layer of rocks, boulders, and large rounded stones, much as sea walls are treated. The top bristled with troops and machine guns, and they opened on us with a pretty useful fire.

"However, I spread out my guns, got the elevation of the Wall, fired at an angle which allowed one to rake the top with shrapnel, and at the same time lobbed over plenty of bombs.

"The fire on the top of the Wall soon cleared off the de-

fenders. I then gave the order to charge and make a direct frontal assault on the Wall. We clambered up by stones and rocks, got on top and saw the main body of Wu's troops in a hectic state of panic on the other side.

"Machine guns and light field guns soon got them on the run, and an enfilading fire of big three hundred-pound bombs put the whole lot into utter confusion. The Battle of the Great Wall was won.

"I cannot pretend that it was a particularly thrilling or glorious affair. But it amused me, as it would have amused any British subaltern who had seen a bit of real war: and it pleased Chang Tso Lin."

The way was now open to Peking, and Chang entered the Imperial City in state, as the ruler of Northern China. His first action as ruler was to appoint Frank Sutton as Major General of his army and to present him with twenty thousand pounds as a "mark of appreciation" of the great victory he had gained and of his services generally.

After this excitement General Sutton resumed his real work of gun-making — work which he gladly undertook because he believed Chang to be the most genuinely patriotic of all the rival war lords in China and the only one strong enough and vigorous enough to stand any chance of uniting the vast Empire and driving out the Bolshevik agents who were working ceaselessly to stir up trouble between the Chinese and the foreigners whose business had brought so much wealth to the country in the past.

The Red agents, and other people whose bribery General Sutton had stopped, made his stay in China more perilous than it would otherwise have been. The Bolsheviks knew that Chang's English adviser was constantly warning him against them and the word went forth that he must

be got rid of. About a dozen attempts were made to assassinate him. "Revolvers were used mostly," wrote General Sutton, "but one or two bombs were thrown by the most enthusiastic people from Moscow. None hit me."

He went down to Shanghai for a holiday and while there bought a ticket for the Shanghai lottery. When the results came out, he found that his ticket had drawn the winner and that he was richer by twenty thousand pounds.

Back in Peking and Manchuria again, the attempts to "get him" became more persistent and it was obviously only a matter of time before his good luck would fail and a bullet or a bomb finish the adventure. "The humour of being shot at begins to pall after the thirteenth bullet has parted your hair and raised a vision of one's wife and family and a pleasant little farm somewhere back in England," said General Sutton. He decided to quit before it was too late.

Chang Tso Lin expressed his grief and insisted it should be for a holiday only, and presented his British General with ten thousand pounds toward his expenses! So in the summer of 1927 Frank Sutton, M. C., the only British general in any Chinese army for half a century, left Mukden, some hundreds of thousands of pounds richer than he had entered it three years before, and sailed for Vancouver and home.

He never went back. Perhaps that was why Chang Tso Lin was eventually defeated. General Sutton's Chinese adventure was over and finished, but Frank Sutton, one of the amazing adventurers of our generation, still felt too young to retire. After a brief stay in London — just long enough to let England know that Chang Tso Lin's one-armed English General was not a "mystery" but a real

man — he was off again on further travels, first to Vancouver, where he is fostering the trade and development of one of the richest untapped districts within the British Empire — the Peace River district — and later to California and elsewhere. For men like General Frank Sutton must be doing big things somewhere. And for preference, somewhere off the beaten track and where risks can be taken for high rewards.

One day he may return to Asia and there, as a veteran Chinese general who knows the real China as few white men have ever known it, teach the natives how to form a strong wise government and maintain peace.

That is just the sort of job which would appeal to him, for next to the British Empire and its development he is most interested in the inscrutable East and the teeming millions among whom he risked his life, because he could not "settle down" at home.

It has been written that only three Englishmen ever really knew China — General Gordon, Sir Robert Hart, and Sir Richard Dane, who organised the Salt Tax for the Imperial Government. To these three great British authorities on the changing East must be added a fourth — Frank Sutton, the English warrior and pioneer in whose life of adventure his years as Chief Munitions officer to Chang Tso Lin and general commanding a Northern Chinese Republican army provide material for the strangest and most thrilling chapter.

CHAPTER XVII

RACING ROUND CAPE HORN

With A. J. Villiers through the Worst Seas in the World

ON January 19, 1928, any ship approaching Port Lincoln, Australia, would have witnessed a rare sight — and one which will soon become rarer still. This was the setting out to sea of two of the last of the four-masted barks still sailing seas which have long given up sails for steam and oil.

They were the *Beatrice* and the *Herzogin Cecilie,* outward bound for England with cargoes of Australian grain, and their voyage was destined to take them around Cape Horn and across the world. Both are among the most famous of the few "windjammers" still afloat. They left within five hours of each other. Both were manned by boys anxious to secure a training in seamanship in the finest way in the world. And both were intent on one thing — to spread every stitch of canvas possible and to be the first into Falmouth.

It was at nine o'clock in the morning when the *Beatrice* stood out of the harbour under her tops'ls, fores'l, and fore-and-afters. By two o'clock in the afternoon the *Herzogin Cecilie* was cleaving the green water with her keen nose turned toward England. One of the last great races of the dwindling fleet of four-masters had begun.

The story of that voyage might have been lost, like the story of countless voyages before. Sailors do not often write. They keep no diaries, and usually the log compiled

by the skipper is the only record of adventures encountered on the most adventurous job in the world. It was fortunate that among the youngsters on the *Herzogin Cecilie* in this great race under sail in the year 1928 was a journalist, A. J. Villiers, experienced in the ways of sailing ships. He was making the voyage so that its record might be told, and it is due to him that we are now able to relate this story.

Probably any of those aboard will laugh at the idea of their voyage being called an adventure. These two ships were carrying on their normal business of bringing cargoes of wheat to Europe. They had both made dozens of voyages before without any one being interested in their doings. The fact that they both left harbour on the same day bound for the same port meant a race, which thrilled those on board, but need not have interested any one else.

Their experiences during the ninety-six days out of sight of land which passed before the winner saw the English coast looming up on the horizon of boundless waters were only the ordinary ones which fall to the lot of every "shellback" on every voyage under sail.

Yet we believe that few will be able to read this chapter without the thrill which a seafaring race knows when they read the story of brave ships. For there is a romance about these last of the sailing ships unknown to those who have never watched sails spreading in the breeze. Slowly these windjammers are disappearing from the seas. Soon they will have disappeared for ever, save for interesting relics of the sailing age chartered by rich men who want a new thrill. Already the old sailing-ship fleets have gone — all but one, which is owned by Captain Gustaf Erikson of Mariehamn, who has gathered many of the remaining sailing ships under his flag because he loves them.

When, perhaps soon, these ships follow the *Cutty Sark* and the great racing clippers of the past into oblivion, all who love the sea and its romance will look back on voyages like this race of the *Beatrice* and the *Herzogin Cecilie* as we look back on the voyages of Drake and Raleigh. For these sailing ships, dependent upon wind and sea, are the last strongholds of the real adventurer-mariners. And so we include in this book of modern heroes the tale of young mariners who sailed from Port Lincoln in these ships of other days.

"There is something strangely attractive, some glimmer, maybe, of the elusive and indefinable thing called romance about the setting out of a big sailing ship to sea," says Mr. Villiers. "The mere fact that for weeks and weeks to come — months and months often — over perhaps 14,000 miles of sea, she will be dependent upon the wind to blow her to her destination, gives to the sailor an air of the sea that can never be the steamer's. The steamer is a machine which uses the sea as a handy means for the conveyance of goods; the sailing ship is the culmination of centuries of progress towards the evolution of a perfect vessel which may progress with the wind at sea. The steamer makes a voyage; the sailor sails one.

"The steamer exists in spite of the sea; the sailing ship lives with the sea, and is, on its long lonely voyagings, part of it. And who may see the white-sailed, beautiful ship — blunt bowed, full in the lines, oversparred and undermanned though she too often may be — setting out upon a long voyage without feeling something of the call of the sea, something of the call of Life?"

But first a word about the two ships whose story we are to tell. The *Herzogin Cecilie* was built in Germany in 1902

as a training ship for German seamen, who still know the value of sails as a university of the sea. She is a powerful, lofty, steel four-masted bark of 3,242 tons register, 314 feet in length, 46 feet in breadth, and 23 feet 8 inches in depth, and she is the most splendidly equipped sailing vessel afloat to-day.

This fine ship, fitted with electric lights and wireless, is the flagship of Captain Erikson's fleet and she has some wonderful voyages to her credit. In 1927 she won a race of seventeen grain-laden sailing ships from Australia to the English Channel, beating the record of the next fastest ship by over three weeks. She once sailed nearly twenty-two hundred miles in one week, and on another occasion she journeyed from the Azores to the English Channel in five days — wonderful time record for a sailing ship. Her longest time at sea was one hundred and thirty six days on a voyage from Australia to England, but on her shorter voyages this remarkable boat has often managed to keep "steamer time" — to make the trip as quickly as any steamer could do it.

Such was the vessel with which A. J. Villiers signed on as an able-bodied seaman in order to record the story of her most interesting race.

And now a word about her rival, the *Beatrice*. This vessel was built in 1881 as the British sailing ship *Routenburn,* and she is one of the best iron vessels ever launched. She is of 2,096 tons register, 289 feet in length, 42 feet 2 inches in breadth, and 23 feet 9 inches in depth. The *Beatrice* has made some famous voyages, including Melbourne to London in 116 days and Port Lincoln to Falmouth in 114 days.

On the voyage we are relating the *Herzogin Cecilie* was

commanded by Captain de Cloux, one of the finest sailing masters ever produced in Finland, the land of sailing seamen. He was forty-three years of age when the voyage began, and he had been commanding sailing ships for twelve years. The *Beatrice* was commanded by Captain Harald Bruce, thirty-nine years of age, who had been a skipper of sailing ships since his twenty-third year.

The *Herzogin Cecilie,* the vessel whose story is told here, had aboard a crew of only twenty-six "men" — all too few to do the stiff work almost certainly to be experienced in taking a sailing ship across the world. "Twenty-six boys" would have been a better description, for the oldest man of the ten who served in the first mate's watch aboard was A. J. Villiers. And he was twenty-four.

But what they lacked in years, that crew made up in enthusiasm. They were bound on an adventure that will appeal to every boy between fifteen and fifty. And they were sure that at the end it was their ship which would touch Falmouth first and win this last great race of the windjammers.

For the first two weeks at sea the *Herzogin Cecilie* had no luck at all. On the first night out they saw the *Beatrice,* driving to clear the narrow waters outside Port Lincoln. Her captain had not been there before, Captain de Cloux had; a fact which gave the larger boat a decided advantage. They stood out to sea by another route, and when they had reached open water those aboard thought they had shaken the *Beatrice* off. But they had done nothing of the kind.

The morning that they got well clear of the land, a boy up on the royal yard — one of the cross-spars aloft — saw their rival going along nicely on the horizon astern. For a

few hours she was in sight. Then they lost her and did not see her again during the whole voyage.

For a fortnight after that they made poor progress, and the voyage looked like developing more into a record for length rather than speed. It was a tiresome fortnight for the young adventurers on the *Herzogin Cecilie* for they knew that their main hope of beating the *Beatrice* was to make Cape Horn quickly, and they piled on the canvas to make the most of the great westerly winds that roar along in that region of perpetual gales.

There, they knew, their greater power and loftier rig would give them an advantage which they must use to their utmost if they were to be first at Falmouth. The *Herzogin Cecilie* could carry certain sails in a wind that would compel the *Beatrice* to furl; they knew that they could fly along at fifteen knots when she would be wallowing drunkenly in the seas, shipping water by the hundred tons, and steering about as well as a rudderless coal lighter.

Even the light easterly wind with which they started had dropped. They were becalmed at the very beginning of their voyage. The wind flatly refused to come from the west, or to roar through the rigging. They wanted gales and they had calms which barely moved them for days on end.

There was a reason for this bad luck, of course. A stowaway had been discovered on board, and that stowaway was a woman. Every one knows that according to real sailormen women aboard bring bad luck.

It was on the morning of the second day at sea that this woman who had dared to put to sea in a windjammer was discovered. The morning had been dull and grey, and there had been rain during the night. In a squall during the mid-

night watch the weather-sheet of a sail had blown out, and daylight found two members of the crew of the port watch aloft, making good the damage.

While they were aloft the two sailors saw a strange figure emerge from the charthouse on the poop and stand by the rail, looking out to sea. There was nobody else there, and the figure, apparently thinking itself unseen, sank on a grating by the wheel as though it were very tired.

The men looked again and saw that although the figure was dressed in boys' clothing, it was a woman. They nearly fell off the rigging in their surprise. A moment later they slid to the deck and rushed for'ard to tell the mate. The mate swore, and the crew cursed, but there was nothing to be done unless they could sight a steamer that would take the unwelcome passenger back to Australia.

But no smoke of a steamer appeared, despite a special watch aloft to look out for it. And so the stowaway stayed aboard the *Herzogin Cecilie* for the entire voyage, just as she had intended to do. The fact that she was the only person on the ship who was pleased about it did not worry her in the least.

The crew knew her at sight. She was a young teacher from Adelaide, on holiday at Port Lincoln while they had been loading there in 1927, and she had been aboard so often, and asked so many times to be allowed to voyage with them, that in the end no one paid any regard to her enthusiasm. Her reiterated requests to be allowed to come were met with laughing refusals — "This voyage wasn't woman's work" — and her threat to stow herself away before the ship left port was treated as a good joke.

The ship had left for Europe, and the young woman had gone back to her job. But she could not forget the

white-winged sailor, and the following year she again asked to be allowed to make a voyage in her. Once more the impossibility was pointed out to her. Again she threatened to stow herself away on board. All that happened was that the wharf workmen laughed loud and long at the idea of a girl at sea in a four-master. But the girl did not laugh — she watched for her opportunity and smuggled herself aboard. This time, she decided, she would carry out her threat.

Says A. J. Villiers in his fascinating book "Falmouth for Orders,"[1] which records a great voyage: "She came out of the fifth hatch. Down in the hold she would have been comfortable enough with the sacks of wheat for her bed and the rats for company. Maybe that company was her greatest ordeal! When she was found she did not seem worried at all. She had only the clothes she stood up in, and they were a youth's, and she had no money at all. She was alone among twenty-six men for a four-months voyage. But she smiled serenely and did not appear concerned with the prospect either of the immediate present or of the future to the slightest degree. She was there — in a great sailing ship at sea — and that was all she wanted."

The stowaway was not long in making herself useful. She proved a good worker, and her time was soon fully occupied with keeping the quarters aft cleaner than they had ever been before, and teaching English and playing chess. She made herself some dresses out of an old cloth from the cabin table, and before long the sight of her sitting on deck making feminine things excited no comment at all. True, no one in the ship had ever heard of such a thing happening before. But as Fyhrqvist, Villiers' cabin mate observed

[1] Geoffrey Bles, London; Henry Holt & Co., New York.

sagely, "There's nothing some women won't do these days, so long as it's damn fool enough."

If no steamer was sighted to relieve them of their stowaway, neither did the longed-for winds come. The crew, always anxious and superstitious at the beginning of a long voyage, surveyed the prospects of a passage to the Horn and grew despondent. Already they were looking forward to coming into Falmouth to find the *Beatrice* lying at anchor there and scornfully offering them a tow-rope.

Fog, head winds, calm, rain — they had them all, and after two weeks they had not passed Campbell Island. If there was not much progress, however, there was plenty of work for the nineteen boys and the officers who commanded them. "Head winds," says Mr. Villiers, "brought frequent puttings about in the endeavour to make as much of what there was as possible; fog brought weary hours on the focs'l head, braying away with the fog-horn at the world of grey sea, albatrosses and thick-hanging clammy fog; and the yards are never hauled round so much as in a calm. The odd moments of fresh winds brought torn sails, and hard work aloft getting them down and bending new ones."

So sixteen days passed without one good wind. They had not reached the longitude of New Zealand; the run to Cape Horn had not commenced. And they had hoped to pass that bleak headland in less than thirty days. Looked more like fifty!

On the night of the sixteenth day out it began to blow heavily, with rain in squalls and heavy weather. The *Herzogin Cecilie* had then been enshrouded with fog for five days, and the crew had no idea of their exact location, except that somewhere near at hand was Campbell Island.

When the wind came they headed south, although it was already bitterly cold, and all the seas that came aboard left ice in their trail.

When the skipper reckoned he was far enough to the south, he turned the ship's head for Cape Horn. Then the gales roared behind her and along she flew. Then it was that those aboard got their first acquaintance with the most adventurous life on earth.

In the first night watch of that day the ship sailed forty-eight miles; before that she had covered two hundred and ninety miles in sixteen days. Every stitch of canvas was piled on her and the ship quivered as she stumbled a little in her stride at times, or when a big sea hit her with a crash, sending up a shower of spray.

The wind roared through the rigging; sails strained at sheet and brace and yard, threatening to carry them away; it needed two men to keep the wheel steady. What did it matter? The real race had begun and the *Herzogin Cecilie* was going to show her rival what she could do. "Drive her, sailor," said the crew; "drive her till the lee side smokes hot, flush with the water, till she needs four men at the wheel, till she ships green seas along the length of her — if only she flies on. Drive her, sailor, for she can stand it."

But could she? Soon sail had to be taken in. "And," says Mr. Villiers, "before that night was out we had one of the hardest fights upon the tops'l-yard of *Herzogin Cecilie* that I ever experienced at sea, with an upper tops'l from which the whole of the gear had carried away."

In seventeen days they sailed from the longitude of New Zealand to Cape Horn — five thousand miles, with gales all the way. Often the ship did sixteen knots, and still they drove her faster. That was what they wanted. The foam

and spume stretched on either side as the big ship raced on; every sea came tumbling aboard; every squall that came drove mercilessly down upon them and put ice on their faces and frostbite in their hands. But always they drove on.

There came a time when they drove her too hard. On the evening of the thirtieth day out — black and sullen, with the air full of shrieking wind — the glass dropped alarmingly and the wind that had been a gale before whipped up until the ship lay right over, and the deck rail for'ard was lost beneath the boiling seas.

In the stinging rain squalls the wind grew stronger and stronger. Then three sails blew out simultaneously, and they had to take some in, or lose the lot. That nightmare of taking in sail in a full Cape Horn gale began immediately and lasted for thirty-six hours. Thirty-six hours of peril and torment, any one of which would have taken the heart and spirit out of lesser men.

At the end of the fight they had got her down to six top-s'ls and the foresail. They meant to leave her at that, seeing that it was pretty snug storm canvas, but no sooner were they back on deck than another sail carried away with it a flying rush of electric sparks and a boom of blown-out canvas, and they had to begin again. Then it was that they learned that so far they had only been playing.

The moment they attempted to clew up the sail the whole of the gear was blown away. They stared at each other, those boys, in dismay. They were pretty far gone — tired out and frozen.

"Aloft and furl it," yelled the mate, his great voice thundering above the wind, and he led the way himself.

It looked madness to lie along that yard. It *was* madness.

But it had to be done. It looked madness even to attempt to ascend that rigging, dipping this way and that in dizzy swings, as the boat heeled over in the seas. But up they went, just the same. It is impossible for those who have not tried it to imagine the job that handful of tired and worn-out boys faced that bitter night.

The whole foremast was quivering and shaking with the furious flying about of the sail; the great steel yard shivered with the vibration; the rigging shook violently, as though it wanted to shake them off into the boiling seas below. The loose ends of the broken sail and the wire buntlines were flying through the air, writhing like steel snakes, and any one who had been hit by them would have known no more sailoring round Cape Horn.

Lying out along that yard, with the whole area of the sail flying back and over, looked like facing certain death. But nobody thought of things like that as, inch by inch, they fought their way out. The wet sail — over a thousand feet of storm canvas — was banging back over the yard; every now and then they had to crouch beneath the yard and lie balanced on the foot ropes until the mass of canvas blew out again.

"I have not the faintest idea how we got that sail fast," Mr. Villiers told the authors. "I don't think any one who was there has. We fought it times without number, and lost. The moon rose, sunk; the sun rose, and still we fought up there, working like machines, half dead with fatigue, but still working mechanically on. At last we won. That was not before our bare hands — you cannot fight wet canvas with gloves — were red with blood and blue with cold."

A flying steel buntline end touched one of the German boys on the head once and brought swift blood. He reeled

a bit — standing there on a piece of swinging steel rope with roaring seas below him — but he tried to carry on. Then he fainted for a while, and because they could not get him down to the deck, they had to lash him to the yard where he stood. Later he revived and carried on again. Stay-at-home people would have called that boy a hero. Up there, high above the deck of a ship fighting a Cape Horn gale, he was just one of a number of sailing-ship sailors. It is no use any one signing on for a sailing-ship voyage if they are not prepared to see it through like that.

Thirty-three days out from Port Lincoln they rounded the Horn. They passed the Cape in bright sunshine. Good going. The day before the Horn was reached she had done 304 miles.

"The morning of the day we passed the Horn was bright and beautiful," writes Mr. Villiers in "Falmouth for Orders", "with clear sunlight that, though it gave no actual warmth, yet disguised the cold a bit; and our great fair wind blew us on. It was splendid to be on a sailing ship then, and to walk the decks — with several coats on — and hear the music of it all, to look aloft at the white sails and the whiter clouds far overhead and to watch the water slipping by. We were doing a steady thirteen knots then, fairly roaring along, rolling heavily now and then as the old ship dipped her rusty sides in answer to the caressing of the foam. It was all very grand, and rather pleasant, and infinitely beautiful — in the morning. Who would not be there, we thought, in a great sailing ship racing round Cape Horn?"

Yet a few hours later, on that same afternoon, the sun had gone and the sky blackened over and bitter hail-squalls raced up and lashed them as they worked on deck, numbing

their fingers. By afternoon the wind was again roaring through the rigging, while the seas smoked in cold fury and smashed cruelly at the bulwarks as the ship rolled along. The world's worst headland, the grave of a thousand mighty sailing ships, was living up to its dread name.

With the passing of Cape Horn, however, the worst of the voyage was over. The crew wondered whether they were ahead of the *Beatrice* or behind her. They had gone so far south, and had such bad weather, that they felt fairly confident that they must have gained an advantage over the less powerful vessel. Still they could not be sure — and they were utterly cut off from the outside world, with no means of finding out.

The passage of the South Atlantic was long and tedious. Again they had calms, and light winds and head winds — in fact, every sort of weather except the wind which would send them rolling along for home. For twenty days they did not have one strong wind. For over a week they made no progress.

While they were waiting for the trade winds that would pick them up and blow them to the English Channel, they set about the task of changing sail. Every sailing ship has strong winter canvas for the heavy work around the Horn, and the lighter sails for the kindlier winds of the tropics. And as canvas is expensive and the wear and tear enormous, as soon as the roaring gales are left behind, all sails are changed over.

It is necessary to do this in fine weather, for canvas will soon rot if it is rolled and stored away wet. Therefore at the best of times changing sail, which takes some days on a great sailing ship, is a gamble. It means twelve hours of hard work a day for days on end. And then when

you are in the middle of it, rain may come and delay the work when it is half finished.

The *Herzogin Cecilie* was not lucky. No sooner had the task of changing sail begun than, with appalling suddenness and without the slightest warning, the wind fled utterly and rain poured down from the sky. It was not like ordinary rain — the sky just turned into water and fell into the sea. "And in the midst of it all," says Mr. Villiers, "were we hanging aloft, struggling with the wet and lifeless sails. Five seconds after that rain began, we were absolutely sodden. The water poured into our eyes, down our backs, into our slippers, into the sheaths of our knives. The noise it made when it hit the sea was loud and sharp; it was interesting to be up there, high above the decks, and see the rain falling into the sea and sending up little spurts just as if it were falling on an asphalt street."

The job had begun and so it had to be finished. Then followed more days of calm in a sweltering temperature like a Turkish bath. And then, sixty days out, came the trade winds at last.

Now it roared. For three weeks they had progressed six hundred miles. Then in five days the ship raced sixteen hundred miles and came right up to the Equator. That is typical of sailing-ship life — the element of surprise is always there.

Then the winds left them and they wallowed in the calm. And on the first of those days when they were making hardly any progress, they sighted their first ship since watching the *Beatrice* disappear over the horizon more than two months before.

It was in the first light of day that they sighted her. Just a white sail sticking up out of the sea, at first. As they

overhauled her, more sails and then a hull came into view, and the question on every one's lips was answered. It was not their rival, the *Beatrice.*

She was a Swedish four-masted bark, the *C. B. Pedersen,* and that had left Sydney with wheat for Queenstown some days before the *Herzogin Cecilie* had left South Australia. The wind was light and it took them two days to get close enough to the stranger to signal.

Had the other seen *Beatrice?* they asked, and she replied that she hadn't. Then the crew cheered.

Before they parted, these two shiploads of men each exiled from the world for weeks together, held parties aboard each ship, took photographs, and revelled in human company. Then the wind came back, and the *Herzogin Cecilie* said "Good-bye" to the only human beings they were to speak with the whole of that ninety-six day voyage across the world.

They had bad luck again in the early stages of their passage of the North Atlantic. The northeast winds upon which they relied for a swift crossing were too far northerly, and drove them west off their course. Instead of heading for the English Channel, they were driving toward the Gulf of Mexico, and before they knew what was happening they found themselves in the weed of the Sargasso Sea.

The wind died down, and left them there in an oily swell, with the thick brown weeds all around, and slimy monsters of the deep crawling around in the clearness of the depths below — huge octopuses and monster crabs.

They hauled some of the weed on board with boathooks and found it teeming with life. Besides the crabs, which were particularly bad-tempered brutes, according to Mr. Villiers, there were shrimps, and most amazingly

minute fish. Some of these were like miniature sword-fish complete in every detail although only three inches long. The boys on board leapt upon these specimens and consigned them to bottles, to be taken proudly home as souvenirs of the voyage. An eager watch was kept for derelicts, wrecks, treasure ships, and skulls of pirates, and such like things which are read about in the books which had sent more than one of the youngsters aboard to sea. But all that they saw of the wonders of the Sargasso were the crabs, octopuses, and another amazing fish which they caught and cooked, and which made every one ill.

The weed lay around them for about a week, but it was never thick enough to impede their progress. Then a strong westerly wind came up and they left it behind. That wind stayed with them, and the *Herzogin Cecilie* passed the Azores on her eighty-ninth day out.

From the Azores to the Channel they had a famous passage, though off the Bay of Biscay they struck a hurricane that rolled up tremendous seas and did some damage aboard. In the midst of the storm the mainsail blew clean away, and judging by the speed with which it left them they reckoned it must have blown to the Sahara Desert.

"The sea was the ugliest we had experienced since coming round the Horn," writes Mr. Villiers, "and since the wind had hauled around on the beam the ship was labouring heavily. It was very hard to stand on her wet decks, with the wild motion, the seas swirling around, the very force of the wind."

In the midst of that gale some of the crew were swept across the deck, and when they had extricated themselves it was seen that one stayed down where he had fallen. He was an Englishman, and for one moment, as they looked

ONE OF THE LAST OF THE 'WINDJAMMERS,' AND THE FINEST SIGHT OF THE SEAS

The *Herzogin Cecilie* nearing Falmouth after her race across the world.

Photo Topical Press

at the blood on his head where he had hit a steel bit, they thought he was dead. The captain forced brandy down his throat, felt anxiously the enfeebled pulse. He lived, but he was unconscious for two days. However, it takes a lot to kill a sailing-ship sailor, and by the time they reached Falmouth he was quite well again.

At last came the day — the ninety-sixth at sea — when at sunrise they saw a faint haze on the horizon ahead. "And the haze was England!" The voyage was over — the storms and stresses past. Nineteen boys and their officers had safely sailed the good ship the *Herzogin Cecilie* across the world.

Had the *Beatrice* arrived? Eagerly they shouted the question to the pilot who came out to conduct them into port. The *Beatrice* had not been seen. They had reached England and they had won one of the last races of the sailing ships. No wonder those boys and men cheered as they entered Falmouth Bay.

Fifteen thousand nine hundred miles the taff rail log showed. In ninety-six days! It was not "fast" as the world speaks of speed to-day, but it was good going. For it had not been an easy voyage. The whole progress had been a battle with adverse winds and gales — calms off New Zealand, gales and misery off Cape Horn, calms in the South Atlantic, more calms off the Sargasso, and then a full gale off the Bay of Biscay. And despite it all they had won. It was April 24 when the *Herzogin Cecilie* reached Falmouth. It was May 12 before the *Beatrice* arrived, having taken 114 days 15 hours and 30 minutes to make the voyage from Port Lincoln.

The *Beatrice* had struck even worse weather for sailing — one calm after another. Yet she, too, had made a voyage

which, if it did not beat that of the *Herzogin Cecilie,* beat most other sailing-ship times on the same run. For they are both famous boats, these two, and they are manned by crews that love the sea and skippers that love sailing ships before everything.

When they at length go on their last voyage, it may be that we shall never see their like again, and this story of their race across the world may be one of the last to be told of the white-sailed ships that have so long kept adventure and romance alive on the high seas.

Meanwhile the last of the windjammers, a dwindling band, are still making their annual voyages loaded with Australian wheat across the world. And A. J. Villiers is still sailing the Cape Horn route, now as part-owner of the *Parma,* commanded by his old friend Captain de Cloux. In 1932 the *Parma* made the best passage out of sixteen ships. Both the *Parma* and Mr Villiers made the same voyage again in 1933—for there's something about these wind-ships which makes brave hearts forget weather, storms, and discomfort in the thrill of the greatest adventure of all.

CHAPTER XVIII

THE ICE-FIGHTERS OF THE NORTH ATLANTIC

How Lieutenant F. A. Zeusler and his Men withstand the Constant Assaults of the Arctic

THE list of fine ships that have disappeared in the Northern Atlantic is a terribly long one and in almost every case their disappearance is attributed to ice. In the spring of 1890 four steamers vanished utterly; in the spring of 1899 no fewer than ten vessels disappeared and were never again heard of. The most famous iceberg accident of the nineteenth century was that of the Guion liner *Arizona,* then one of the speed queens of the world's oceans. Late in November, 1879, she rammed a berg in a midnight fog on the Grand Banks of Newfoundland, shattering her stem almost back to the foremast.

By a sort of miracle the ice filled the gap, and by reversing the ship came off and reached St. John's in safety with her cargo of six hundred and fifty souls. In dock more than three hundred tons of ice were taken out of her forepeak. In 1885 the *City of Berlin* had a similar escape, for she drove right into an iceberg, and her seven hundred passengers and crew were in desperate peril for forty-eight hours until she managed to creep into the safety of the same haven as the *Arizona.*

So many and so terrible were the wrecks caused by icebergs that in the end the great transatlantic companies held a conference and adopted a route or lane three hundred miles south of the Grand Banks, which in the main

afforded a margin of safety. But not a complete margin, for in some years the ice drives much farther south than in others. 1912 was such a year. During April of that year a vast ice field drifted south and spread itself across the transatlantic sea lane, a field estimated at seventy miles in length with a breadth of thirty-five miles. The Cunarder *Carmania,* feeling her way through it, sighted no fewer than twenty-five bergs; the French liner *Magara* ran into a "growler," a small berg which knocked two holes through her plating below water line; three other ships, the *Kura, Lord Cromer,* and *Armenia,* were damaged by collision with floating fragments, and several fishing vessels were caught and imprisoned in the great ice field.

Then came the greatest disaster of all. The giant *Titanic,* at that time the largest ship in the world, and sister of the magnificent *Olympic,* was on her maiden voyage from England to America. She was steaming at twenty-one knots on the clear but moonless night of April 14 when an iceberg was sighted. It was close but not close enough to appear dangerous and the ship's course was quickly changed so as to avoid it. Suddenly came a shock — not heavy — indeed so light that many passengers did not awake until the stopping of the engines roused them. The *Titanic* had struck a great underwater shelf or spike of ice projecting to a considerable distance from the visible berg, and her bottom plating was ripped from her stem clear to the centre of her mammoth hull. The blow was fatal, and although the great ship floated for two hours and forty minutes, it was impossible to save more than a fraction of the multitude who filled the floating hotel. Seven hundred were saved. Nearly fifteen hundred went down into the icy depths.

The shock of this disaster was felt throughout the civilized world and a conference was held in which it was decided to inaugurate an Ice Patrol, and this was undertaken by the United States. Three coast-guard cutters were detailed to do the work, and before giving some details of their difficult and dangerous task, it is well to say that their efforts have been so successful that during the seventeen years from 1912 to 1929 not a life has been lost from a liner through collision with icebergs.

The full title of the service is "The International Derelict Destruction, Ice Observation, and Ice Patrol Service", and its work is threefold. It consists in observing the movements of icebergs in the North Atlantic, and in some cases destroying them, in sending out warnings to vessels of all sorts navigating the North Atlantic, from liners down to fishing craft, and in the hunting down and destroying floating derelicts which are almost as great a threat to navigation as ice itself.

Although the United States Coast Guard Service undertakes the actual work, the cost is shared between Great Britain, France, Germany, Italy, Belgium, Holland, Norway, Sweden, Canada, and the United States, according to the tonnage of the fleets of these various countries. Three cutters are reserved for the work, two of which are constantly at sea, while the third is kept in reserve in case of accident to either of the other two. These patrol vessels are not large. Each is only two hundred and forty feet long and thirty-nine feet in beam, tiny craft indeed when compared with giants like the *Leviathan* or *Olympic,* which are nearly four times as long and more than twice as broad. Yet small as they are they are very finely and strongly built and most powerfully engined. They are driven by

electricity, making them clean, comfortable, and easily handled, and each carries a crew of eighty-four men and ten officers. The ships are armed with five-inch guns and quick-firers and carry a considerable store of explosives of various kinds. The wireless outfit is of the very newest and best, and the operators are all experts. They are busy day and night when ice is about, and when you consider that they send out some four hundred and fifty thousand messages in the course of one season this is easily understood.

The crew are picked men, all in perfect physical condition and kept so by constant drilling and work. This is of course essential, for many of their tasks are extraordinarily difficult and risky. It is no child's play to land on an iceberg in mid-ocean with a heavy surf breaking against its foot, yet on occasion this may have to be done, either for the purpose of blowing up and destroying the berg or — as is more frequently necessary — rescuing survivors from wrecks. In a recent case five men whose fishing vessels had been wrecked and sunk by collision with ice were found upon a "pancake" of ice, a small floe so rotten and near to dissolution that the rescuers hardly dared step on to it to help the men off. They had hardly got them safe aboard the cutter before the half-melted floe broke up, dissolved, and vanished.

The busy season for the Ice Patrol is during the four months beginning March first. It is about this date that the bergs begin to drift down out of Davis Strait past the coast of Labrador and so down by Newfoundland on to the Banks. Their numbers depend upon the strength of the so-called Labrador current, and that in turn is said to depend upon the prevalence of northwesterly winds dur-

ing the early spring. The statistics of icebergs are almost incredible. Passengers on the mail boat plying north to Labrador ports often count two hundred to three hundred bergs off that coast during a day's run. Their size is as startling as their numbers. The Hudson Bay steamer *Pelican* passed one off Ungava which was nine miles long and two hundred and seventy feet high, and one seen in White Bay, also on the Labrador coast, was three hundred and eighteen feet high. When you realize that a berg shows only one eighth of its bulk above the surface, the depth of such a monster can be imagined. It was actually half a mile from base to summit. A berg that stranded in Melville Bay was reckoned to weigh two thousand million tons and was aground in water two thousand four hundred feet deep. The biggest mass of ice ever seen in the North Atlantic was reported in July, 1928, by the Pacific liner *Empress of Scotland* while on a voyage to Quebec. It was no less than five miles long and rose about one hundred feet above the water. Atlantic bergs are bad enough but they are dwarfs compared with those seen in the Antarctic. In 1893 the *Loch Torridon* passed one off Cape Horn that rose to fifteen hundred feet above the sea, and in 1896 the *Antarctic* saw one in the same neighbourhood that was sixty miles in length.

In the spring icebergs are carried south over the Grand Banks of Newfoundland and a good many of them ground in the shallow water there. As the season advances and the sun grows warmer they break up and their fragments float farther south into the steamship lanes. It is amazing how far south they travel. The limit of drift ice in the western Atlantic is actually the latitude of New York, and New York is on the same parallel as Rome. It is indeed

fortunate for the inhabitants of the British Isles that the Gulf Stream and the warm southwesterly winds do not permit ice to block British ports in the spring of each year.

The worst sufferers from icebergs are the steamers plying through the mouth of the St. Lawrence. They meet floes and bergs not only on the Banks but in Belle Isle Strait and in Cabot Strait, even in the mouth of the St. Lawrence itself. This area is infested with ice from December until May. Cable ships which operate on the Newfoundland coast find icebergs their worst enemies, and no fewer than eighty per cent. of cable breaks in this neighbourhood are caused by icebergs. Sailing vessels, coastal and fishing craft, are constant sufferers, and the death roll from ice accidents on the Newfoundland coast was very heavy in the days before the Ice Patrol was established. Whaling and sealing steamers get "nipped" between opposing masses of ice. A magnet-like attraction seems to draw two bergs together, and woe betide any unfortunate craft that cannot get out of the way.

All this ice comes in the first place from the Greenland coast where enormous glaciers (ice rivers) flow constantly downward into the sea. No one knows the exact thickness of the icecap which covers all Southern Greenland. In the centre it may be a mile or more in depth. And ice, being elastic, flows slowly down over the rock, pushing out along the valleys into the sea. As the ice is forced out into salt water its buoyancy lifts it until the whole front breaks off. This "calving", as it is called, is accompanied by a deafening roar, and an enormous wave is thrown up. Then away floats the new-born iceberg carried south by the polar current until it arrives at a point where it is sighted by the Ice

THE ICE PATROL CUTTER ROUNDING AN ICEBERG OFF THE GRAND BANKS OF NEWFOUNDLAND, ONE OF THE MAIN 'TRAFFIC LANES' OF THE SEAS

Photo E. N. A.

ICE-FIGHTERS OF THE ATLANTIC WATCHING THE EXPLOSION IN AN ICEBERG CAUSED BY THE FIRING OF A 100-POUND CHARGE OF THERMIT

The heat of this explosion split the berg and hastened its end.

Photo E.N.A.

Patrol and reported by wireless to every ship in the neighbourhood.

If we have dwelt on the dangers of these floating ice islands, it is because the cutters themselves, the *Modoc* and the *Tampa,* are for months on end in the very midst of these dangers. The crews, it is true, take turn and turn about but Lieutenant Zeusler and his two officers next in command get no such rest from their labours. When one vessel comes in they promptly transfer to the other and are off again instantly on their difficult and perilous task. Tasks, one might better say, for their work is more than that of hunting ice and warning other ships of its position. They are, for instance, constantly making experiments with a view to destroying bergs. At one time it was thought that an iceberg was so brittle that a few shells from heavy guns would be sufficient to break even the largest berg into pieces. This experiment was tried many years ago and a battleship bombarded a berg with her twelve-inch guns. The results were, however, very disappointing. A few fragments were chipped from the great mass and slid down into the sea but the ice island itself continued to float on majestically.

The theory that high explosive could be used to smash up floating ice was not given up and it developed upon the Ice Patrol to try the next experiment in that direction. The first attempt was made in 1925, the subject being a small old berg which showed only ten feet of its height above the surface. Such an ice mass is more dangerous than a larger, more lofty berg, for it is so much more difficult to see. A boat was sent out with a crew of eight men who fastened a mine holding about two hundred-weight of T.N.T. to the iceberg — not an easy job in the sea that

was running. Then they pulled away, unreeling a wire as they went. When they had reached a safe distance, a switch was closed and a tremendous explosion sent a column of water and ice fragments high into the air. When the commotion had died down it was seen that one third of the berg was broken away and it was estimated that the life of this particular peril had been shortened by about two days.

Encouraged by this success, a second berg was chosen, a much larger one than the other, for it was three hundred feet long and rose quite one hundred and fifty feet above the surface of the sea. When an attempt was made to approach it, the men in the boat found that a great ledge similar to that which had wrecked the *Titanic* projected under the water to a considerable distance from the main body of ice. Two mines were laid on this ledge as near as possible to the cliff-like side and were set off by an electric contact, as before. There followed a loud roar, and as a great cloud of smoke arose, small fragments of ice rained from the upper part of the berg. But the berg itself remained quite unharmed.

The crew of the cutter were annoyed and decided to try again. This time a line was shot by means of a rocket gun right over the top of the berg. To one end of this was attached a full sized mine which was sunk seventy-five feet under water against the side of the berg. The weight of this mine was balanced by a sack of old iron of similar poundage attached to the other end of the line. When all was ready they hauled off and let loose. This time the berg shook so that for a moment it was thought she was going to turn turtle, but she steadied again and floated majestically as ever. For once the Ice Patrol were completely defeated and retired.

But this was not the end of their experiments. Later in the season, nearly at the end of May, a very big berg was seen floating southward north of the Banks. All big bergs are numbered by the Patrol and to this monster was given the number fourteen. Monster indeed she was, for her summit towered to a height of two hundred and sixty-seven feet above the waves, and her weight was estimated at something like a million and a half tons. Her position and her drift (twenty-one miles a day) were at once signalled to all shipping in the neighbourhood, and the cutter's crew watched her, fully expecting she would ground on the Banks. She did not do so but floated down into warmer water. Fog fell and they lost sight of her.

On June 7 the fog lifted, and behold! there was Number 14 only a few miles away, looking as big and imposing as ever. As the cutter approached there came a mighty roar and half the top of the monster fell inwards. Two more days they watched her drift nearer to the steamship lines, then decided to attack her. The great berg had already passed out of the Arctic current into the warmer waters of the edge of the Gulf Stream and was showing signs of decay, but she was so huge that the melting process would evidently take a long time. A large tongue of ice ran out on one side under water and with some difficulty mines were laid on this and exploded. The effect was practically *nil*. Lieutenant Zeusler was not discouraged. He decided to land men on the berg, blast a hole in its side, and put a charge well into the mass of ice. At best landing on a berg is a risky business, especially one that is beginning to melt. Wearing boots filled with crampons (steel-spiked soles) the men landed on a shelf washed by the waves, then cut steps in the ice until they had gained a shelf forty feet

up. Here they laid four small charges and set them off, blowing a deepish hole in the side of the berg. Then came the perilous business of hauling up a great charge of T.N.T., which was buried fifteen feet deep in the prepared hole and tamped in firmly. The men climbed down into the rocking boat and got away safely. Now at last they hoped to see some real result from their efforts, and all watched eagerly while the charge was fired. The bang was tremendous, but when the eddying smoke clouds cleared away, disappointment was written big on every face, for all that could be seen was a big black smudge across the ice face. There was no other effect whatever. Yet the charge was sufficient to have sent the biggest warship afloat to the bottom.

Watch was kept on Number 14 to see what would become of it. She drifted into the Gulf Stream and on June 12 a huge fall of ice was noticed from her upper part. A week later a heavy gale blew up and when this was over, the magnificent monster was a mere wreck only ninety feet in height. Five days later half of the remains fell into ruins, and by the first day of July she had completely vanished.

The experiment has been tried of shooting torpedoes at bergs, and for this purpose an American destroyer, *Breckenridge,* joined the Patrol. But the experiment was only partially successful and the experts have come to the conclusion that mankind has yet to evolve some invention capable of dealing with icebergs, for no explosive made has much effect upon the tough and elastic material of which they are composed.

Another popular belief which the investigations of the Ice Patrol have shattered is that the presence of ice can

be detected by a sharp fall of temperature. The only instance in which cold was felt from an iceberg was when the cutter was close to leeward of a berg, and the wind blowing directly from it to the ship. When the weather is suitable, the commander often allows his crew bathing leave and the men have been swimming within a couple of hundred yards of floating ice, yet finding the water, warmed by the Gulf Stream, quite pleasant.

A third illusion is that icebergs, unseen in fog or darkness, can be detected by echo. One of the cutters deliberately steamed in among eleven huge icebergs and sounded her siren, changing her position frequently among the towering masses of ice. Not once did she get an echo, and Lieutenant Zeusler is of the opinion that the only iceberg which returns an echo is one with a smooth perpendicular face, and even then the echoes are apt to be deceptive.

It is generally believed by landsmen that there is always a "blink" or white light in the sky over an iceberg. Here again the report of the Ice Patrol does not support any such belief; a blink, it appears, is only seen over a large field of floe ice, not over a single berg.

The crews of the Ice Patrol cutters are all picked men, and the way in which they handle the ships' boats in rough Atlantic weather must be seen to be believed. Besides their work in spotting ice and warning ships of danger, they act as lifeboatmen and frequently take the crews off fishing vessels damaged by storm or ice. The fishing vessels on the Banks frequently need medical help and the doctors from the cutters have to trust their lives in small boats in heavy seas when on such errands of mercy. It may be a case of accident, a broken arm or leg, or more often of fish poisoning, a blood infection caused by clean-

ing fish. They render other services to the fishing fleets, acting as postmen and providing the crews with tobacco and similar small luxuries. No wonder that they are immensely popular on the Banks.